Appendix 7

Final report from the second interlaboratory validation study

Estrogen Receptor Binding Assay using Rat Uterine Cytosol (ER-RUC assay)

Lab Y

Note: The analyses, summary, and conclusions in this report were prepared by the individual laboratory. For reasons described in the Integrated Summary Report (ISR) for the ER-RUC assay, data were normalized in a different way for the final analysis that is presented in the ISR. Thus the analyses, summary, and conclusions in this report may differ from those in the ISR.

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In Vitro Estrogen Receptor Binding Assays
Task Order 6
Task 7

Sub Contract No.: 5-340-0210114 (Mod. 1)

Final Report

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In Vitro Estrogen Receptor Saturation Binding and Competitive Binding Assays Using Uterine Cytosol

Task Order 6
Task 7

Final Report

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FOREWORD

This final report is submitted in compliance with the requirement of the subcontract # 5-340-0210114 (Modification # 1) and summarizes the work performed from 6 February 2008 through 10 July 2008 by The Hamner Institutes for Health Sciences as subcontractor to RTI International, Research Triangle Park, NC 27709. The information contained herein is submitted with the understanding that it is privileged or confidential in accordance with the Freedom of Information Act, 5 U.S.C., Section 552(b)(4). All of the assay procedures for ***In Vitro*** **Estrogen Receptor Binding Assays** were performed in accordance with the EPA Protocol for the ***In Vitro*** **Estrogen Receptor Saturation Binding and Competitive Binding Assays using Rat Uterine Cytosol** by the Hamner Institutes for Health Sciences.

SUMMARY

For the ER Binding Project under Task 7, we have performed 4 saturation binding assays with 3 cytosol preparations and over 170 competitive binding assays to obtain acceptable data. The protein value of cytosol preparation (Prep)-3, 4, and 5 from commercially obtained uteri was 8.09, 6.67, and 2.5 mg/ml, respectively. The saturation binding assay for cytosol prep-3 with 50 µg of protein, showed a K_d value of 0.061 nM which was within the range of the protocol criteria for K_d measurement (0.05 nM to 0.5 nM) and a linear Scatchard plot. The B_{max} value was 17.43 fmol ER/100 µg protein. The saturation binding assay for cytosol prep-4 with 50 µg of protein had a K_d value of 0.138 nM which was within the range of the protocol criteria for K_d measurement and a linear Scatchard plot. The B_{max} value was 15.17 fmol ER/100 µg protein. The saturation binding assay for cytosol prep-5 with 50 µg of protein, showed a K_d value of 0.235 nM which was within the range of the protocol criteria for K_d measurement and a linear Scatchard plot. The B_{max} value was 36.46 fmol ER/100 µg protein. The binding curves of specific [^{3}H]-17β-estradiol binding versus radioligand concentration for the saturation binding experiments of all the cytosol preparations reached a plateau for maximum specific binding indicative of saturation of the ER with the radioligand.

The competitive binding assays showed reproducible standard curves for estradiol, the weak positive, norethynodrel, and the negative control, R1881. The IC_{50} values for 17β-estradiol were reproducible for each experiment and within the expected values. A representative value for average IC_{50} value for 17β-estradiol (from 20 competitive binding assays), norethynodrel (from 19 competitive binding assays), and R1881 (from 10 competitive binding assays) was -8.99±4.43E-02, -6.06±5.16E-02, and -4.77±1.7E-01, respectively. Norethynodrel showed a low, but positive, relative binding affinity (1.30E-03 ± 9.59E-05) when compared to 17β-estradiol.

Based on the criteria for determining the classification of a chemical from the Hill slope data of approximately -1.0, the test chemicals were determined to be positive, negative, or equivocal. There were 15 chemicals which were found to be positive. The positive chemicals were: code # 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 15, 17, and 23. There were 8 chemicals that were negative. The negative chemicals were: code # 8, 14, 16, 18, 19, 20, 21, and 22.

For the 20 optional chemicals, one within criteria run was performed for each of them. Based on the single run with the above classification criteria, 9 chemicals were classified as negative and 11 were positive. The negative chemicals were: code # 27, 28, 30, 31, 35, 36, 38, 45, and 46. The positive chemicals were: code # 29, 32, 33, 34, 37, 39, 40, 41, 42, 43, and 44.

SECTION I: BACKGROUND

The Food Quality Protection Act of 1996 requires that the Environmental Protection Agency (EPA) develop and implement a screening program using validated test systems to determine the potential estrogenic effects from pesticides in humans. One of the test systems being considered for inclusion in the screening program is an estrogen receptor (ER) binding assay. The ER binding assay protocol in this Task Order 6 uses rat uterine cytosol (RUC) as source of receptor. The purpose of Task 7 is to test a battery of chemicals and classify them as positive, negative, or equivocal in binding relative to 17β- estradiol using the ER competitive binding assay. The Hamner was selected as one of the qualified laboratories to conduct Task 7. This report is a compilation of 23 chemicals with an additional 20 optional chemicals tested and submitted to RTI as a part of the subcontract requirement.

SECTION II: MATERIALS AND METHODS

II.1 Materials

II.1.1 [^{3}H]-17β-estradiol, 2,4,6,7,16,17-^{3}H-17β-estradiol was purchased from PerkinElmer Life and Analytical Sciences (Boston, MA). Catalog#: NET 51700, Batch#: 3589221 and 3589791, Specific Activity (SA): 110 Ci/mmole, Date SA certified: 8/8/07 and 3/10/08, Concentration: 1 mCi/ml. Both were stored at 4°C in their original containers as per the protocol. **Note: Batch#: 3589791 was used in all runs using cytosol prep-3. In mid-June, a sample of batch#: 3589791 was obtained from RTI which had been stored at -20°C in its original container. This batch of [^{3}H]-17β-estradiol was used in saturation assay of 061608 (cytosol prep-4 and 5) and all competitive binding assays using cytosol prep-5. For recording purposes, it was designated as 3589791-RTI. Batch#: 3589221 was not used in any run.**

II.1.2 17β-estradiol was purchased from SIGMA (St. Louis, MO). Catalog#: E8875, Lot#: 026K1806, CAS#: 50-28-2, 99% purity.

II.1.3 Norethynodrel was purchased from US Pharmacopeial Convention, Inc. (Rockville, MD). Catalog#: 1471007, Lot#: G, CAS#: 68-23-5, 100% purity.

II.1.4 Unknown test chemicals were provided by EPA via Battelle chemical repository and stored at ambient or appropriate temperature.

II.2 Methods

Detailed methodology can be found in The Hamner Protocol based on the original EPA protocol on **"*In Vitro* ER Receptor Binding Assay"** included as Appendix A.

II.2.1 Ovariectomy and Uteri Collection

Ovariectomy and uteri collection was done at Harlan Sprague-Dawley, Inc. (Indianapolis, IN). Cytosol preparations were prepared from uteri collected from ovariectomized Sprague-Dawley rats that were 88–93 days old at time of surgery. Uteri were removed 8 days after ovariectomy, blotted weights were recorded, and the tissues were flash frozen.

II.2.2 Preparation of Cytosol

Cytosol preparation done on 2/29/08 was designated as cytosol prep-3. Cytosol preparation done on 4/20/08 was designated as cytosol prep-4. Cytosol preparation done on 6/12/08 was designated as cytosol prep-5. Uteri were placed in ice-cold TEDG + PMSF buffer (10 mM Tris (pH 7.4), 1.5 mM EDTA, 10% glycerol, 1 mM phenylmethylsulfonyl fluoride, 1 mM DTT, made fresh) at a ratio of 0.1 g of tissue per 1.0 ml TEDG + PMSF buffer. The tissues were homogenized using a Polytron (PT 35/10) homogenizer for 5 bursts (~5 seconds per burst). The homogenate was transferred to pre-cooled centrifuge tubes and centrifuged for 10 min at 2,500 × g at 4°C. The supernatant was then transferred to pre-cooled ultracentrifuge tubes and centrifuged at 105,000 × g for 60 min at 4°C. The pellet was discarded, the cytosol supernatants combined, and aliquots of cytosol were stored at -80°C.

II.2.3 Determination of Protein Concentration

The protein concentration was determined using the Bio-Rad protein assay kit (Hercules, CA) using Hamner SOP. A 1:20 or 1:40 dilution of the cytosol was made in ddH_2O. Ten (10) µl of diluted cytosol or standard was assayed in a 96 well microtiter plate. Protein standard concentrations for standard curve were 0, 31.25, 62.5, 125, 250, 500, 1000µg /ml. Bio-Rad dye reagent was diluted according to manufacturer's instructions and 200µl was added to each well with mixing. The reaction was allowed to proceed at RT for 5 min. The absorbance was measured at a wavelength of 595 nm by using a SPECTRAmax 340 (00A ROM v2.04 Feb 1, 96) microplate reader (Molecular Devices, Sunnyvale, CA).

II.2.4 Estrogen Receptor Binding Assays

II.2.4.1 Saturation Binding Assay

A Saturation Binding assay was performed to determine the concentration of protein to use in the Competitive Binding assays for the unknown test chemicals. In the Saturation Binding assay, rat uterine cytosol was tested at a concentration of either 25 or 50 µg protein/tube. The concentration of [^{3}H]-17ß-estradiol used was 0.03–3 nM. Before preparing the serial dilutions for the saturation binding assay, the specific activity (SA) was adjusted for decay over time. The calculation for SA was made

using the "QuickCalcs" (see Appendix E) webpage from GraphPad (http://www.graphpad.com/quickcalcs/radcalcform.cfm). The concentration of inert 17ß-estradiol used was 3–300 nM. The samples were incubated for 16–20 hr at 4º C. The bound [^{3}H]-17ß-estradiol was separated from the free [^{3}H]-17ß-estradiol by adding 250 µl of hydrated hydroxyapatite (HAP; CAS# 1306-06-05) and vortexing. Ice cold buffer was added and the tubes were centrifuged to pellet the HAP which contains the estrogen-receptor-bound [^{3}H]-17ß-estradiol. The pellets were washed two more times by vortexing and centrifuging and suspended in 1.5 ml of 100% ethanol. One ml of ethanol sample was added to 14 ml of scintillation fluid in a 20 ml scintillation vial and counted in a Packard Tri-Carb 2200C liquid scintillation analyzer in a scintillation counter to determine DPMs/vial. The affinity of the radioligand for the receptor (K_d), maximum number of receptor bound (B_{max}) and 10% rule criteria (ratio of total binding in the absence of competitor to the total amount of [^{3}H]-17β – estradiol added) were used for the evaluation of the saturation binding. All calculations were done using the worksheet and GraphPad Prism templates provided by EPA.

II.2.4.2 Competitive Binding Assay With Unknown Test Chemicals

The test and optional chemicals were tested in the order requested by EPA. Rat uterine cytosol was used at a concentration of 50 µg protein/tube. **Note: Because of the progressive decrease in the specific total binding, the Sponsor (in a conference call with RTI and The Hamner) suggested that the concentration of cytosol should be increased to 100 µg protein/tube. This was done for all competitive binding experiments between 4/17 and 6/18/2008. However, for all competitive binding runs using the [^{3}H]-17ß-estradiol received from RTI, 50 µg protein of cytosol prep-5 was used.** The concentration of [^{3}H]-17ß-estradiol used was 1 nM. Before preparing the concentration of [^{3}H]-17ß-estradiol for the competitive binding assay, the specific activity (SA) was adjusted for decay over time. The calculation for SA was made using the "QuickCalcs" webpage from GraphPad (http://www.graphpad.com/quickcalcs/radcalcform.cfm) (see Appendix E). The final concentration range for generating the 17ß-estradiol standard curve was 1×10^{-7} to

1×10^{-11} M. The final concentration range of the weak positive control, norethynodrel, was 1×10^{-4} to $1\times10^{-8.5}$ M. The final concentration range of the negative control, R1881, was 1×10^{-3} to 1×10^{-10} M. Based on the solubility of each test chemical in ethanol, most test chemicals were diluted in ethanol and tested at a final concentration range of 1×10^{-15} to 1×10^{-3} M in log increments (see Table 6). The exceptions were chemical 5, 22, and 18 which were dissolved in DMSO at a final concentration range of 1×10^{-11} to 1×10^{-3} M in log increments.

The samples were incubated for 16–20 hr at 4ºC. The bound [^{3}H]-17ß-estradiol was separated from the free [^{3}H]-17ß-estradiol by adding 250 µl of hydrated hydroxyapatite (HAP) and vortexing. Ice cold buffer was added and the tubes were centrifuged to pellet the HAP which contains the estrogen-receptor-bound [^{3}H]-17ß-estradiol. The pellets were washed two more times by vortexing and centrifuging and suspended in 1.5 ml of 100% ethanol. One ml of the ethanol sample was added to 14 ml of scintillation fluid in a 20 ml scintillation vial and counted in a Packard Tri-Carb 2200C liquid scintillation analyzer to determine DPMs/vial. The log (IC_{50}) and relative binding affinity (RBA) were calculated according to the worksheet and GraphPad Prism templates provided by EPA and used for the evaluation of the competitive binding assay.

II.2.4.3 Preparation of Test Chemicals for Standard Curve Generation

1. Chemical Code # 7, 11, 12, 19, 20, and 23: For generating standard curve (final concentrations: 1×10^{-10} to 1×10^{-3} M), these chemicals were made as follows: a 100 mM stock concentration in EtOH was made first. From the 100 mM stock, a 1:2 dilution (5×10^{-2}M) was made in TEDG + PMSF buffer (hereafter referred to as TP buffer). The next 1:10 dilution (5×10^{-3}M) was cloudy when 100 µl of 5×10^{-2}M was added to 900 µl of TP buffer. Therefore, a combination of 700 µl TP buffer and 200 µl EtOH was used (which dissolved the chemicals very well) to make the 5×10^{-3}M concentration. Using this proportion of TP buffer and EtOH, the final EtOH concentration in sample tube was 1.6% which was within the criteria of a final concentration of EtOH in the sample tube of < 3%. For the

5×10^{-4} to 5×10^{-9} M concentrations, 1:10 serial dilutions were made in TP buffer from the 5×10^{-3}M concentration (100 µl chemical + 900 µl TP buffer).

2. Chemical Code # 10, 15, and 21: For generating standard curve (final concentrations: 1×10^{-12} to 1×10^{-3} M), these chemicals were made as follows: a 100 mM stock concentration in EtOH was made first. From the 100 mM stock, a 1:2 dilution (5×10^{-2}M) was made in TP buffer. For the 5×10^{-3} to 5×10^{-9}M concentrations, 1:10 serial dilutions were made in TP buffer from the 5×10^{-2}M concentration (100 µl chemical + 900 µl TP buffer).

   Note: Other standard curves for Chemical Code # 10 were generated as follows: For final concentrations of 1×10^{-5} to 1×10^{-12} M, a 10 mM stock concentration in EtOH was made first. From the 10 mM stock, a 1:20 dilution (5×10^{-4}M) was made in 50% TP buffer. Therefore, using this proportion of TP buffer and EtOH, the final EtOH concentration in sample tube was within the criteria of a final concentration of EtOH in the sample tube of < 3%. For the 5×10^{-4} to 5×10^{-11} M concentrations, 1:10 serial dilutions were made in TP buffer from the 5×10^{-4} M concentration (100 µl chemical + 900 µl TP buffer).

3. Chemical Code # 18 and 22: Since these two chemicals did not dissolve well in EtOH, DMSO was used as the solvent. For generating standard curve (final concentrations: 1×10^{-11} to 1×10^{-4} M), a 100 mM stock concentration in DMSO was made first. From the 100 mM stock, a dilution of 5×10^{-3}M was made using 500 µl TP buffer, 450 µl DMSO and 50 µl of 100 mM stock. For the 5×10^{-4} to 5×10^{-10} M concentrations, 1:10 serial dilutions were made in TP buffer from the 5×10^{-3}M concentration (100 µl chemical + 900 µl TP buffer).

4. Chemical Code # 16: For generating standard curve (final concentrations: 1×10^{-10} to 1×10^{-3} M), a 100 mM stock concentration in EtOH was made. From the 100 mM stock, a 1:2 dilution (5×10^{-2}M) was made in TP buffer. The next 1:10 dilution (5×10^{-3}M) was cloudy when 100 µl of 5×10^{-2}M was added to 900 µl of TP buffer. Therefore, a combination of 600 µl TP buffer and 300 µl EtOH was used (which dissolved the chemical well) to make the 5×10^{-3}M concentration. The final EtOH concentration in sample tube was 1.8% which was within the

criteria of a final concentration of EtOH in the sample tube of < 3%. For the 5×10^{-4} to 5×10^{-9} M concentrations, 1:10 serial dilutions were made in TP buffer from the 5×10^{-3}M concentration (100 µl chemical + 900 µl TP buffer).

5. Chemical Code # 5: Since this chemical did not dissolve well in EtOH, DMSO was used as the solvent. For generating standard curve (final concentrations: 1×10^{-10} to 1×10^{-3}M), a 100 mM stock concentration in DMSO was made first. From the 100 mM stock, a dilution of 5×10^{-2}M was made using 500 µl TP buffer, 500 µl of 100 mM stock. The next 1:10 dilution (5×10^{-3}M) was cloudy when 100 µl of 5×10^{-2}M was added to 900 µl of TP buffer. Therefore, a combination of 700 µl TP buffer and 200 µl EtOH was used to make the 5×10^{3} M concentration. For the 5×10^{-4} to 5×10^{-9} M concentrations, 1:10 serial dilutions were made in TP buffer from the 5×10^{-3}M concentration (100 µl chemical + 900 µl TP buffer).
6. Chemical Code # 13, 14, and 17: For generating standard curve (final concentrations: 1×10^{-11} to 1×10^{-4} M), a 100 mM stock concentration in EtOH was made first. From the 100 mM stock, a dilution of 5×10^{-3}M was made using 500 µl TP buffer, 450 µl EtOH and 50 µl of 100 mM stock. A combination of 700 µl TP buffer and 200 µl EtOH was used to make the 5×10^{-4}M concentration. For the 5×10^{-5} to 5×10^{-10} M concentrations, 1:10 serial dilutions were made in TP buffer from the 5×10^{-4}M concentration (100 µl chemical + 900 µl TP buffer).
7. Chemical Code # 9: For generating standard curve (final concentrations: 1×10^{-13} to 1×10^{-5} M), a 100 mM stock concentration in EtOH was made first. From the 100 mM stock, a dilution of 5×10^{-4}M was made using 500 µl TP buffer, 495 µl EtOH and 5.0 µl of 100 mM stock. For the 5×10^{-5} to 5×10^{-12} M concentrations, 1:10 serial dilutions were made in TP buffer from the 5×10^{-4}M concentration (100 µl chemical + 900 µl TP buffer).
8. Chemical Code # 4: For generating standard curve (final concentrations: 1×10^{-15} to 1×10^{-8} M), a 100 mM stock concentration in EtOH was made first. From the 100 mM stock, a dilution of 5×10^{-4}M was made using 700 µl TP buffer, 290 µl EtOH and 10 µl of 100 mM stock. From the 5×10^{-4}M stock, a dilution of 5×10^{-6}M was made using 990 µl TP buffer and 10 µl of 5×10^{-4}M stock. For the

5×10^{-7} to 5×10^{-14} M concentrations, 1:10 serial dilutions were made in TP buffer from the 5×10^{-6}M concentration (100 µl chemical + 900 µl TP buffer).

9. Chemical Code # 1 and 3: For generating standard curve (final concentrations: 1×10^{-14} to 1×10^{-6} M), a 100 mM stock concentration in EtOH was made first. From the 100 mM stock, a dilution of 5×10^{-2}M was made using 500 µl TP buffer and 500 µl of 100 mM stock. From the 5×10^{-2}M stock, a dilution of 5×10^{-4}M was made using 990 µl TP buffer and 10 µl of 5×10^{-2}M stock. For the 5×10^{-5} to 5×10^{-12} M concentrations, 1:10 serial dilutions were made in TP buffer from the 5×10^{-4}M concentration (100 µl chemical + 900 µl TP buffer).
10. Chemical Code # 6: For generating standard curve (final concentrations: 1×10^{-11} to 1×10^{-4} M), a 100 mM stock concentration in EtOH was made. From the 100 mM stock, a dilution of 5×10^{-3}M was made using 500 µl TP buffer, 450 µl EtOH and 50 µl of 100 mM stock. For the 5×10^{-4} to 5×10^{-10} M concentrations, 1:10 serial dilutions were made in TP buffer from the 5×10^{-3}M concentration (100 µl chemical + 900 µl TP buffer).
11. Chemical Code # 2: For generating standard curve (final concentrations: 1×10^{-12} to 1×10^{-5} M), a 100 mM stock concentration in EtOH was made first. From the 100 mM stock, a dilution of 5×10^{-2}M was made using 500 µl TP buffer and 500 µl of 100 mM stock. From the 5×10^{-2}M stock, a dilution of 5×10^{-4}M was made using 500 µl TP buffer, 490 µl EtOH and 10 µl of 5×10^{-2}M stock. For the 5×10^{-5} to 5×10^{-11} M concentrations, 1:10 serial dilutions were made in TP buffer from the 5×10^{-4}M concentration (100 µl chemical + 900 µl TP buffer).
12. Chemical Code # 8: For generating standard curve (final concentrations: 1×10^{-10} to 1×10^{-3} M), a 100 mM stock concentration in EtOH was made first. From the 100 mM stock, a concentration of 5×10^{-2}M was made using 500 µl TP buffer and 500 µl of 100 mM stock. The 5×10^{-3}M concentration was made with 600 µl TP buffer, 300 µl EtOH, and 100 µl of 5×10^{-2}M concentration. The 5×10^{-4}M concentration was made with 700 µl TP buffer, 200 µl EtOH, and 100 µl of 5×10^{-3}M concentration. For the 5×10^{-4} to 5×10^{-9} M concentrations, 1:10 serial

dilutions were made in TP buffer from the 5×10^{-3}M concentration (100 µl chemical + 900 µl TP buffer).

13. Chemical Code # 27, 30, 36: For generating standard curve (final concentrations: 1×10^{-12} to 1×10^{-5} M), these chemicals were made as follows: a 5 mM stock concentration was made instead of 100 mM as the chemical would not dissolve at this concentration even after warming, vortexing, or sonication using EtOH. For the 5×10^{-4} to 5×10^{-11} M concentrations, 1:10 serial dilutions were made in TP buffer from the 5×10^{-3}M concentration (100 µl chemical + 900 µl TP buffer).
14. Chemical Code # 28, 29: For generating standard curve (final concentrations: 1×10^{-11} to 1×10^{-4} M), these chemicals were made as follows: a 10 mM stock concentration was made instead of 100 mM as the chemical would not dissolve at this concentration even after warming, vortexing, or sonication using EtOH. From the 10 mM stock, a concentration of 5×10^{-3}M was made using 500 µl TP buffer and 500 µl of 100 mM stock. For the 5×10^{-4} to 5×10^{-10} M concentrations, 1:10 serial dilutions were made in TP buffer from the 5×10^{-3}M concentration (100 µl chemical + 900 µl TP buffer).
15. Chemical Code # 32: For generating standard curve (final concentrations: 1×10^{-10} to 1×10^{-3} M), this chemical was made as follows: a 100 mM stock concentration in EtOH was made first. From the 100 mM stock, a 1:2 dilution (5×10^{-2}M) was made in TP buffer. For the 5×10^{-3} to 5×10^{-9} M concentrations, 1:10 serial dilutions were made in TP buffer from the 5×10^{-2}M concentration (100 µl chemical + 900 µl TP buffer).
16. Chemical Code # 34, 37, 39, 40: For generating standard curve (final concentrations: 1×10^{-11} to 1×10^{-4} M), these chemicals were made as follows: a 50 mM stock concentration in EtOH was made using sonication to dissolve the chemical. The next 1:10 dilution (5×10^{-3}M) was cloudy when 100 µl of 5×10^{-2} M was added to 900 µl of TP buffer. Therefore, a combination of 700 µl TP buffer and 200 µl EtOH was used to make the 5×10^{-3} M concentration. For the 5×10^{-4} to 5×10^{-10} M concentrations, 1:10 serial dilutions were made in TP buffer from the 5×10^{-3}M concentration (100 µl + 900 µl TP buffer).

17. Chemical Code # 31, 38: For generating standard curve (final concentrations: 1×10^{-11} to 1×10^{-4} M), these chemicals were made as follows: a 50 mM stock concentration in EtOH was made using sonication to dissolve the chemical. For the 5×10^{-3} to 5×10^{-10} M concentrations, 1:10 serial dilutions were made in TP buffer from the 5×10^{-2}M chemical concentration (100 µl chemical + 900 µl TP buffer).
18. Chemical Code # 33, 42, 43: For generating standard curve (final concentrations: 1×10^{-10} to 1×10^{-3} M), these chemicals were made as follows: a 100 mM stock concentration in EtOH was made first. From the 100 mM stock, a 1:2 dilution (5×10^{-2}M) was made in TP buffer. The next 1:10 dilution (5×10^{-3}M) was cloudy when 100 µl of 5×10^{-2}M was added to 900 µl of TP buffer. Therefore, a combination of 700 µl TP buffer and 200 µl EtOH was used to make the 5×10^{-3}M. For the 5×10^{-4} to 5×10^{-9} M concentrations, 1:10 serial dilutions were made in TP buffer from the 5×10^{-3}M chemical concentration (100 µl chemical + 900 µl TP buffer).
19. Chemical Code # 35, 42: For generating standard curve (final concentrations: 1×10^{-11} to 1×10^{-4} M), these chemicals were made as follows: a 50 mM stock concentration in EtOH was made using sonication to dissolve the chemical. The next 1:10 dilution (5×10^{-3}M) was cloudy when 100 µl of 5×10^{-2} M was added to 900 µl of TP buffer. Therefore, a combination of 600 µl TP buffer and 300 µl EtOH was used to make the 5×10^{-3} M. For the 5×10^{-4} to 5×10^{-10} M concentrations, 1:10 serial dilutions were made in TP buffer from the 5×10^{-3}M chemical concentration (100 µl chemical + 900 µl TP buffer).
20. Chemical Code # 41, 45, and 46: For generating standard curve (final concentrations: 1×10^{-4} to 1×10^{-11} M), these chemicals were made as follows: a 10 mM stock concentration in EtOH was made first. From the 10 mM stock, a 1:2 dilution (5×10^{-3}M) was made in TP buffer. Therefore, using this proportion of TP buffer and EtOH, the final EtOH concentration in sample tube was within the criteria of a final concentration of EtOH in the sample tube of < 3%. For the

5×10^{-3} to 5×10^{-10} M concentrations, 1:10 serial dilutions were made in TP buffer from the 5×10^{-3}M chemical concentration (100 µl chemical + 900 µl TP buffer).

SECTION III: RESULTS

For the ER Binding Project, we have performed 4 saturation binding assays for 3 cytosol preparations and over 170 competitive binding assays. The summary results for the protein determination of the cytosol preparations are given in Table 1 and Table 2. The summary results for saturation binding assays are given in Table 3 and Figure 1. The summary results for the competitive binding assays are given in Figures 2–24 and Tables 4–8. A sponsor approved Hamner protocol with amendments and a QA Statement is included in Appendix A. The raw data and prism files for the saturation binding assays are included in Appendix B. The raw data and prism files for the competitive binding assays including the within run SD for controls are in Appendix C. Appendix E shows a sample calculation for correcting the specific activity of [^{3}H]-17β –estradiol using GraphPad "Quick Calcs".

III.1 Determination of Cytosol Protein Concentration

A standard curve was generated for determining the cytosol protein concentrations of cytosol prep-3, 4, and 5 (Table 1). The protein concentrations were determined to be 8.09 mg/ml for cytosol prep-3, 6.67 mg/ml for cytosol prep-4, and 2.5 mg/ml for cytosol prep-5 (Table 2).

Table 1. Data from Standard Protein Assay for Cytosol Preparations

Protein Conc. (ug/ml)	**BSA** **Mean OD_{595} Value-Prep3**	**BSA** **Mean OD_{595} Value-Prep4**	**BSA** **Mean OD_{595} Value-Prep5**
0	-0.008	-0.001	-0.002
31.25	0.047	0.047	0.054
62.5	0.114	0.102	0.110
125	0.217	0.213	0.219
250	0.353	0.378	0.393
500	0.665	0.617	0.700
1000	1.045	0.941	0.990
R^2 value	0.999	0.998	1.000

Table 2. Data on Protein Concentrations for Cytosol Preparations

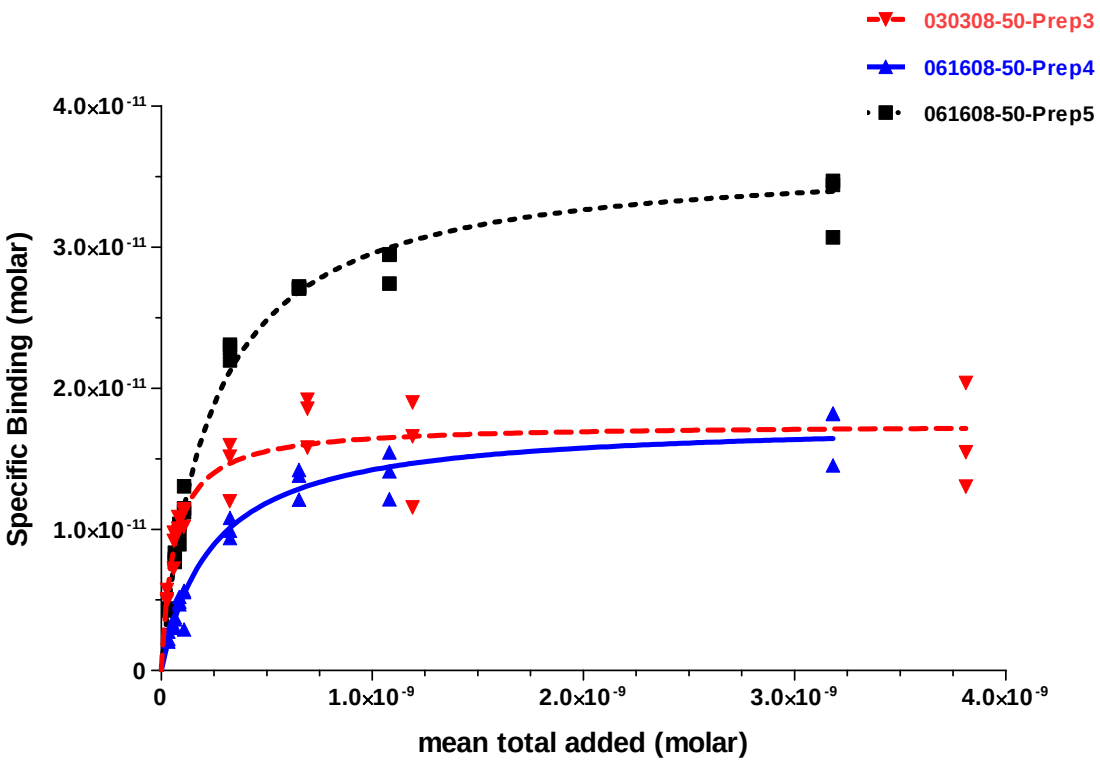
Replicate	Cytosol Prep-3 Protein Conc. (mg/ml)	Cytosol Prep-4 Protein Conc. (mg/ml)	Cytosol Prep-5 Protein Conc. (mg/ml)
1	7.82	6.67	2.52
2	8.36		2.46
3			2.52
AVG±SE	8.09±0.27	6.67	2.50±0.02

III.2 Data on Saturation Binding Assay for Cytosol Preparations

The K_d and B_{max} values obtained by using either 25 or 50 µg protein/tube in the saturation binding assay are presented in Table 3. All values using 25µg protein/tube were not within the expected criteria specifications. For cytosol prep-3, the K_d for 50 µg of protein/ tube was 0.061 nM and was within the criteria of 0.05 to 0.5 nM. The B_{max} for 50 µg of protein/tube was 17.43, which was slightly lower than the expected criteria of 36 to 44 fmol ER/100 µg protein. For cytosol prep-4, the K_d for 50 µg of protein/ tube was 0.138 nM and was within the criteria. The B_{max} for 50 µg of protein/tube was 15.17, which was slightly lower than the expected criteria. For cytosol prep-5, the K_d for 50 µg of protein/ tube was 0.235 nM and the B_{max} was 36.46. Both the Kd and the B_{max} values were within the expected criteria for cytosol prep-5. Therefore, 50 µg of protein/ tube was selected to use in all competitive assays.

Table 3. Data on K_d and B_{max} Values for Cytosol Preparations

Cytosol Prep	µg Protein/tube	K_d (nM)	Bmax (fmol ER/100 µg protein)
3	**25**	0.042	10.99
3	**50**	0.061	17.43
4	**50**	0.138	15.17
5	**50**	0.235	36.46



	061608-50-Prep5	061608-50-Prep4	030308-50-Prep3
Bmax	3.646e-011	1.770e-011	1.743e-011
Kd	2.345e-010	2.453e-010	6.140e-011
Std. Error			
Bmax	8.674e-013	1.066e-012	7.720e-013
Kd	9.677e-012	2.531e-011	7.368e-012
95% Confidence Intervals			
Bmax	3.466e-011 to 3.826e-011	1.549e-011 to 1.991e-011	1.583e-011 to 1.903e-011
Kd	2.145e-010 to 2.546e-010	1.928e-010 to 2.978e-010	4.612e-011 to 7.668e-011
Goodness of Fit			
Degrees of Freedom	22	22	22
R^2 (unweighted)	0.9885	0.9580	0.8030
Weighted Sum of Squares ($1/Y^2$)	0.07400	0.4647	0.4062
Absolute Sum of Squares	2.950e-023	2.831e-023	9.291e-023
Sy.x	0.05800	0.1453	0.1359
Number of points			
Analyzed	24	24	24

Figure 1. Summary of Saturation Curves.

III.3 Representative Data on Competitive Binding Assay for Controls (Estradiol, Norethynodrel, and R1881) from 23 Test Chemicals

The mean IC_{50} values for 17β-estradiol (20 competitive binding assays), norethynodrel (19 competitive binding assays), and R1881 (10 competitive binding assays) for test agents was calculated to be -8.99±4.43E-02, -6.06±5.16E-02, and -4.77±1.66E-01 respectively. Norethynodrel showed a low, but positive relative binding affinity of 1.30E-03±9.59E-05 when compared to 17β-estradiol. A summary of representative values for IC_{50}**,** average within run SD (WRSD), and average Relative Binding Affinity (RBA) for the controls are presented in Table 4. See Appendix D for tables of representative runs.

Table 4. Data on IC_{50}, Average RBA and Average WRSD of Controls for Test Chemicals

IC_{50} (M)	**Estradiol**		**Norethynodrel**		**R1881**	
	Mean	**SE**	**Mean**	**SE**	**Mean**	**SE**
	-8.99	4.43E-02	-6.06	5.16E-02	-4.77	1.66E-01
Average RBA	1.00	-	1.30E-03	9.59E-05	N/A	N/A
Average Within Run SD±SE	4.82±4.54E-01		5.03±5.59E-01		6.20±6.85E-01	

III.4 Data on Competitive Binding Assay for Controls (Estradiol and Norethynodrel) from Optional Chemicals

The mean IC_{50} values for 17β-estradiol and norethynodrel from 6 competitive binding assays for optional chemicals was calculated to be -9.12±1.40E-01 and -5.99±5.76 E-02, respectively. Norethynodrel showed a low, but positive relative binding affinity of 8.91E-04±1.53E-04 when compared to 17β-estradiol. The IC_{50}**,** average WRSD, and average RBA for the controls are presented in Table 5. See Appendix D for tables of competitive runs.

Table 5. Data on IC_{50}, Average RBA and Average WRSD of Controls from Optional Chemicals

IC_{50} (M)	Estradiol		Norethynodrel	
	Mean	SE	Mean	SE
	-9.12	1.40E-01	-5.99	5.76E-02
Average RBA	1.00	-	8.91E-04	1.53E-04
Average WRSD±SE	2.98±3.05E-01		3.79±4.35E-01	

III.5 Data on Competitive Binding Assay for Test Chemicals and Optional Chemicals

The mean IC50, final concentration range (M), average RBA, average Hill Slope and classification for the test chemicals are presented in Table 6. Table 7 gives Log (IC_{50}), RBA, Hill slope, and classification for each test chemical. Table 8 gives Log (IC_{50}), RBA, Hill slope, and classification for each optional chemical. A summary of the estradiol and test chemical graphs are shown in Figures 2 through 24.

Table 6. Data on IC_{50}, Concentration Range (M), Average RBA, Average Hill Slope, and Classification of Test Chemicals

Test Chemical	Chem 12	Chem 19	Chem 11	Chem 21	Chem 15
Average IC_{50} ±SE	-7.63±7.80-02	-3.88±6.51E-02	-5.77±7.17E-02	Not converged	-5.51±2.17E-02
Final Concentration Range (M)	1×10^{-10}-1×10^{-3}	1×10^{-10}- 1×10^{-3}	1×10^{-10}- 1×10^{-3}	1×10^{-10}-1×10^{-3}	1×10^{-10} -1×10^{-3}
Average RBA ±SE	4.06E-02±4.23E-03	6.98E-06±1.69E-06	5.42E-04±3.41E-05	NA	3.25E-04±2.75E-05
Average Hill Slope ±SE	-1.02±6.74E-02	-1.95±1.09E+00	-0.91±9.53E-02	NA	-0.81±3.50E-02
Classification	Positive	Negative	Positive	Negative	Positive

Test Chemical	Chem 22	Chem 16	Chem 5	Chem 17	Chem 9
Average IC_{50} ±SE	Not Converged	-5.32±1.56E-01	-7.47±2.64E-01	-5.63±6.00E-02	-10.96±6.99E-01
Final Concentration Range (M)	1×10^{-11}- 1×10^{-4}	1×10^{-10} -1×10^{-3}	1×10^{-10} -1×10^{-3}	1×10^{-11} - 1×10^{-4}	1×10^{-13} -1×10^{-5}
Average RBA ±SE	NA	2.24E-04±1.04E-04	4.81E-02±1.89E-02	5.05E-04±1.67E-04	1.44E+02±7.20E+01
Average Hill Slope ±SE	NA	-1.29±7.79E-02	-0.74±8.55E-02	-0.91±2.34E-01	-1.21±2.51E-01
Classification	Negative	Negative	Positive	Positive	Positive

Table 6. Data on IC_{50}, Final Concentration Range (M), Average Relative Binding Affinity, Average Hill Slope, and Classification of Test Chemicals (Cont.)

Test Chemical	Chem 4	Chem 14	Chem 20	Chem 3	Chem 23
Average IC_{50} ±SE	-10.22±2.15E-01	Not converged	Not converged	-9.73±2.31E-01	-5.24±2.10E-01
Final Concentration Range (M)	1×10^{-15} -1×10^{-8}	1×10^{-11} - 1×10^{-4}	1×10^{-10} - 1×10^{-3}	1×10^{-14} - 1×10^{-7}	1×10^{-10} - 1×10^{-3}
Average RBA ±SE	2.09E+01±5.04E+00	NA	NA	2.84E+009.22E-01	1.38E-04±2.59E-05
Average Hill Slope ±SE	-0.65±2.03E-02	NA	NA	-0.80±4.37E-02	-0.85±2.52E-01
Classification	Positive	Negative	Negative	Positive	Positive

Test Chemical	Chem 1	Chem 8	Chem 2	Chem 10
Average IC_{50} ±SE	-8.23±2.55E-01	-5.49±1.99E-01	-9.20±1.25E-01	-6.01±1.11E+00
Final Concentration Range (M)	1×10^{-13}-1×10^{-6}	1×10^{-10}-1×10^{-3}	1×10^{-12}-1×10^{-5}	1×10^{-12}-1×10^{-4}
Average RBA ±SE	1.44E+00±1.08E+00	1.01E-03±2.28E-04	2.68E+00±2.19E+00	2.04E-02±2.01E-02
Average Hill Slope ±SE	-0.71±1.56E-01	-1.66±7.45E-01	-0.73±2.71E-02	-0.84±3.24E-01
Classification	Positive	Negative	Positive	Positive

Test Chemical	Chem 18	Chem 13	Chem 7	Chem 6
Average IC_{50} ±SE	-5.24±4.05E-01	-7.43±1.30E-01	-5.04±5.22E-02	-6.19±8.82E-03
Final Concentration Range (M)	1×10^{-11}-1×10^{-4}	1×10^{-11} -1×10^{-4}	1×10^{-10} -1×10^{-3}	1×10^{-11} - 1×10^{-4}
Average RBA ±SE	7.80E-05±6.39E-05	8.54E-02±6.82E-02	1.05E-04±1.04E-05	1.47E-03±8.18E-05
Average Hill Slope ±SE	-0.42±8.07E-02	-1.36±1.39E-01	-1.12±1.34E-01	-1.02±3.33E-02
Classification	Negative	Positive	Positive	Positive

Table 7. Summary of Competition Binding Data

Experiment	Log (IC_{50})	Relative Binding Affinity	Hill Slope	Classification
CHEM 12				**POSITIVE**
030508	**-7.47**	**3.99E-02**	**-1.11**	
030608	**-7.69**	**3.37E-02**	**-0.89**	
032408	**-7.72**	**4.83E-02**	**-1.06**	
AVG±SE	**-7.63±7.80E-02**	**4.06E-02±4.23E-03**	**-1.02±6.74E-02**	
CHEM 19				**NEGATIVE**
030608	**-3.95**	**6.05E-06**	**-4.12**	
031008	**-3.75**	**4.62E-06**	**-0.98**	
031108	**-3.94**	**1.03E-05**	**-0.75**	
AVG±SE	**-3.88±6.51E-02**	**6.98E-06±1.69E-06**	**-1.95±1.09E+00**	
CHEM 11				**POSITIVE**
030508	**-5.63**	**5.72E-04**	**-1.07**	
030608	**-5.84**	**4.74E-04**	**-0.93**	
031008	**-5.85**	**5.81E-04**	**-0.74**	
AVG±SE	**-5.77±7.17E-02**	**5.42E-04±3.41E-05**	**-0.91±9.53E-02**	
CHEM 21				**NEGATIVE**
031108	**Not converged**			
031208	**Not converged**			
031708	**Not converged**			
AVG±SE				
CHEM 15				**POSITIVE**
031108	**-5.49**	**3.66E-04**	**-0.78**	
031208	**-5.49**	**2.72E-04**	**-0.77**	
031708	**-5.56**	**3.357E-04**	**-0.88**	
AVG±SE	**-5.51±2.17E-02**	**3.25E-04±2.75E-05**	**-0.81±3.50E-02**	

Table 7. Summary of Competition Binding Data (Cont.)

Experiment	Log (IC_{50})	Relative Binding Affinity	Hill Slope	Classification
CHEM 22				**NEGATIVE**
032608	**Not Converged**			
032708	**Not Converged**			
033108	**Not Converged**			
AVG±SE				
CHEM 16				**NEGATIVE**
031808	**-5.56**	**2.86E-04**	**-1.39**	
032608	**-5.37**	**3.66E-04**	**-1.35**	
061108	**-5.03**	**2.08E-05**	**-1.14**	
AVG±SE	**-5.32±1.56E-01**	**2.24E-04±1.04E-04**	**-1.29±7.79E-02**	
CHEM 5				**POSITIVE**
032608	**-7.61**	**4.96E-02**	**-0.58**	
032708	**-7.84**	**8.02E-02**	**-0.87**	
033108	**-6.96**	**1.46E-02**	**-0.79**	
AVG±SE	**-7.47±2.64E-01**	**4.81E-02±1.89E-02**	**-0.74±8.55E-02**	
CHEM 17				**POSITIVE**
040308	**-5.53**	**8.38E-04**	**-0.49**	
040808	**-5.62**	**3.21E-04**	**-0.93**	
041008	**-5.74**	**3.56E-04**	**-1.30**	
AVG±SE	**-5.63±6.00E-02**	**5.05E-04±1.67E-04**	**-0.91±2.34E-01**	
CHEM 9				**POSITIVE**
062508	**-11.50**	**1.98E+02**	**-1.23**	
070108	**-9.57**	**1.56E+00**	**-1.63**	
070208	**-11.80**	**2.33E+02**	**-0.76**	
AVG±SE	**-10.96±6.99E-01**	**1.44E+02±7.20E+01**	**-1.21±2.51E-01**	

Table 7. Summary of Competition Binding Data (Cont.)

Experiment	Log (IC_{50})	Relative Binding Affinity	Hill Slope	Classification
CHEM 4				**POSITIVE**
040708	**-10.23**	**2.20E+01**	**-0.66**	
040808	**-10.58**	**2.90E+01**	**-0.61**	
040908	**-9.84**	**1.17E+01**	**-0.68**	
AVG±SE	**-10.22±2.15E-01**	**2.09E+01±5.04E+00**	**-0.65±2.03E-02**	
CHEM 14				**NEGATIVE**
041009	**Not Converged**			
041608	**Not Converged**			
041708	**Not Converged**			
AVG±SE				
CHEM 20				**NEGATIVE**
041009	**Not Converged**			
041608	**Not Converged**			
041708	**Not Converged**			
AVG±SE				
CHEM 3				**POSITIVE**
062308	**-9.83**	**2.91E+00**	**-0.83**	
062408	**-10.07**	**4.40E+00**	**-0.85**	
062508	**-9.29**	**1.21E+00**	**-0.71**	
AVG±SE	**-9.73±2.31E-01**	**2.84E+00±9.22E-01**	**-0.80±4.37E-02**	
CHEM 23				**POSITIVE**
041508	**-5.09**	**1.64E-04**	**-0.82**	
052708	**-4.97**	**1.64E-04**	**-0.87**	
061108	**-5.65**	**8.63E-05**	**-1.60**	
AVG±SE	**-5.24±2.10E-01**	**1.38E-04±2.59E-05**	**-0.85±2.52E-01**	

Table 7. Summary of Competition Binding Data (Cont.)

Experiment	Log (IC_{50})	Relative Binding Affinity	Hill Slope	Classification
CHEM 1				**POSITIVE**
050708	**-7.96**	**1.45E-01**	**-0.44**	
051808	**-7.99**	**5.96E-01**	**-0.98**	
052208	**-8.74**	**3.58E+00**	**-0.72**	
AVG±SE	**-8.23±2.55E-01**	**1.44E+00±1.08E+00**	**-0.71±1.56E-01**	
CHEM 8				**NEGATIVE**
051909	**-5.74**	**1.47E-03**	**-2.95**	
052208	**-5.10**	**8.13E-04**	**-0.37**	
052708	**-5.63**	**7.53E-04**	**-1.65**	
AVG±SE	**-5.49±1.99E-01**	**1.01E-03±2.28E-04**	**-1.66±7.45E-01**	
CHEM 2				**POSITIVE**
051909	**-9.43**	**7.05E+00**	**-0.69**	
062308	**-9.16**	**6.12E-01**	**-0.73**	
062408	**-9.00**	**3.71E-01**	**-0.78**	
AVG±SE	**-9.20±1.25E-01**	**2.68E+00±2.19E+00**	**-0.73±2.71E-02**	
CHEM 10				**POSITIVE**
052108	**-4.68**	**5.75E-04**	**-1.35**	
062308	**-5.13**	**5.73E-05**	**-0.92**	
062408	**-8.21**	**6.07E-02**	**-0.24**	
AVG±SE	**-6.01±1.11E+00**	**2.04E-02±2.01E-02**	**-0.84±3.24E-01**	
CHEM 18				**NEGATIVE**
060408	**Not Converged**			
060508	**-5.64**	**1.42E-04**	**-0.33**	
060608	**-4.83**	**1.42E-05**	**-0.50**	
AVG±SE	**-5.24±4.05E-01**	**7.81E-05±6.39E-05**	**-0.42±8.07E-02**	

Table 7. Summary of Competition Binding Data (Cont.)

Experiment	Log (IC_{50})	Relative Binding Affinity	Hill Slope	Classification
CHEM 13				**POSITIVE**
052108	**-7.27**	**2.22E-01**	**-1.31**	
053008	**-7.69**	**1.54E-02**	**-1.14**	
060608	**-7.33**	**1.90E-02**	**-1.62**	
AVG±SE	**-7.43±1.30E-01**	**8.54E-02±6.82E-02**	**-1.36±1.39E-01**	
CHEM 7				**POSITIVE**
060308	**-5.11**	**1.23E-04**	**-0.87**	
060508	**-4.94**	**8.67E-05**	**-1.16**	
060608	**-5.08**	**1.05E-04**	**-1.33**	
AVG±SE	**-5.04±5.22E-02**	**1.05E-04±1.04E-05**	**-1.12±1.34E-01**	
CHEM 6				**POSITIVE**
060308	**-6.19**	**1.48E-03**	**-1.06**	
060508	**-6.21**	**1.61E-03**	**-1.05**	
060608	**-6.18**	**1.32E-03**	**-0.96**	
AVG±SE	**-6.19±8.82E-03**	**1.47E-03±8.18E-05**	**-1.02±3.33E-02**	

III.6 Summary Data on Competitive Binding for Test Chemicals and Respective Estradiol Controls

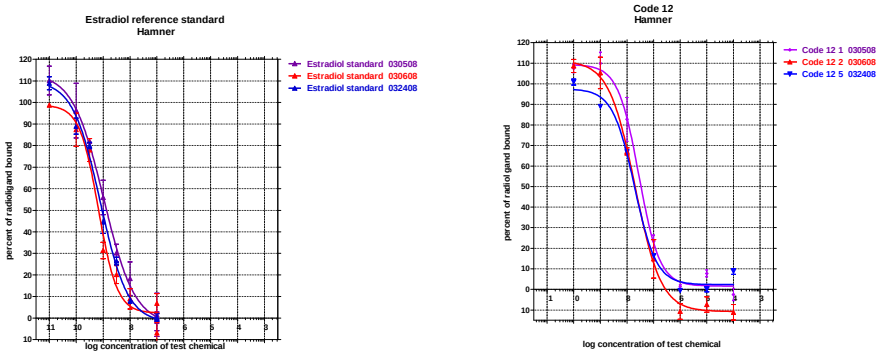


Figure 2. Summary of 17β-estradiol Standard Curves and Chemical 12 curves

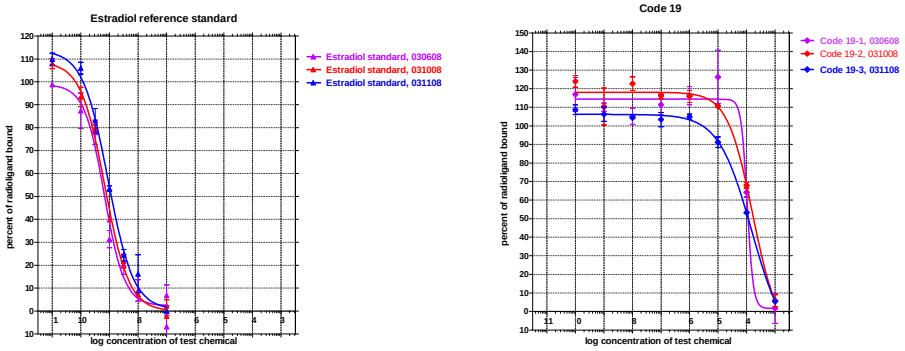


Figure 3. Summary of 17β-estradiol Standard Curves and Chemical 19 curves

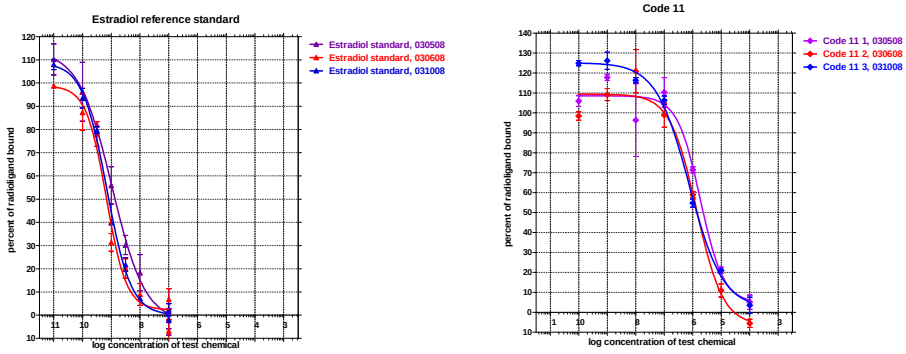


Figure 4. Summary of 17β-estradiol Standard Curves and Chemical 11curves

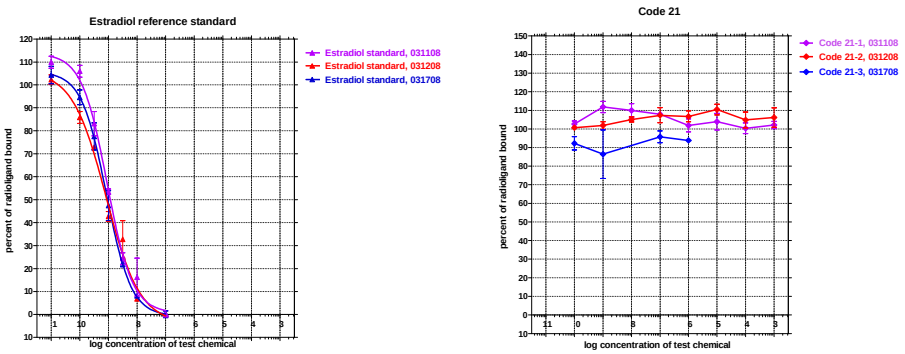


Figure 5. Summary of 17β-estradiol Standard Curves and Chemical 21 curves

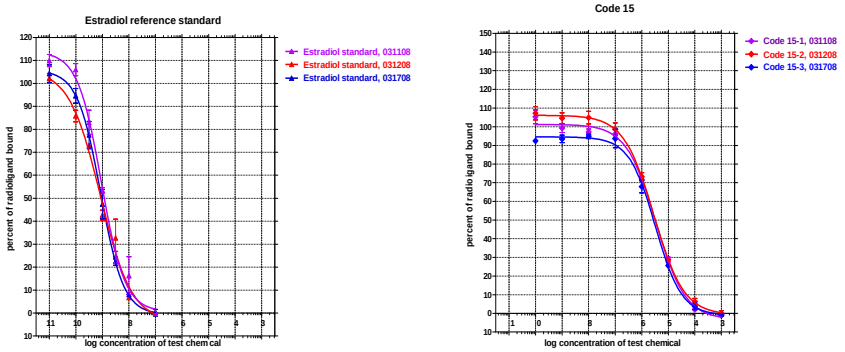


Figure 6. Summary of 17β-estradiol Standard Curves and Chemical 15 curves

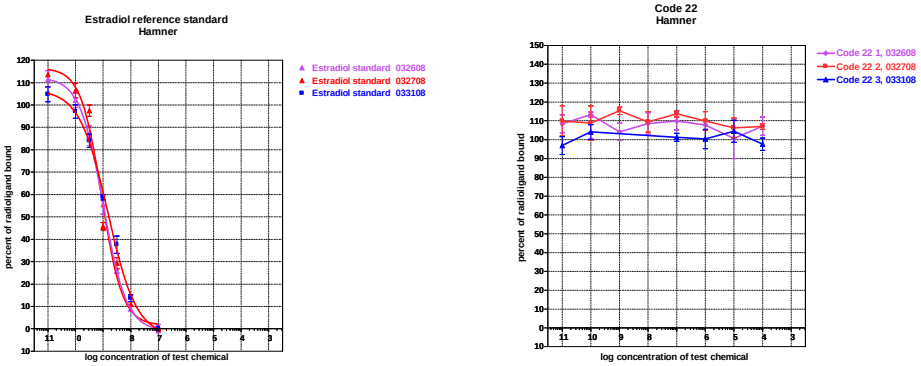


Figure 7. Summary of 17β-estradiol Standard Curves and Chemical 22 curves

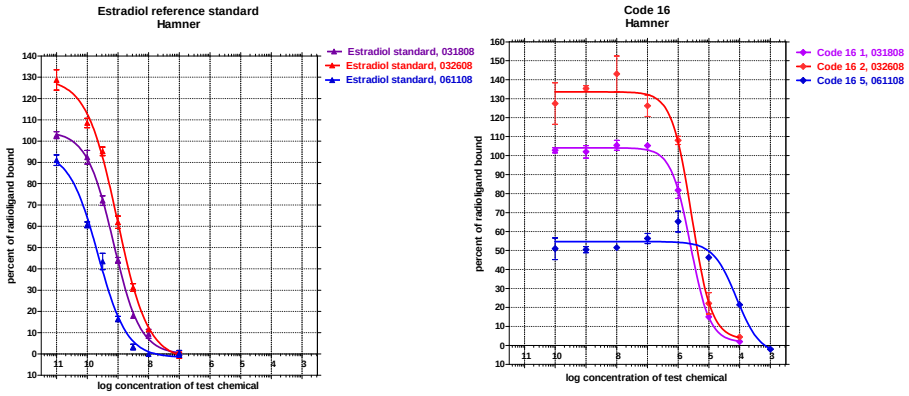


Figure 8. Summary of 17β-estradiol Standard Curves and Chemical 16 curves

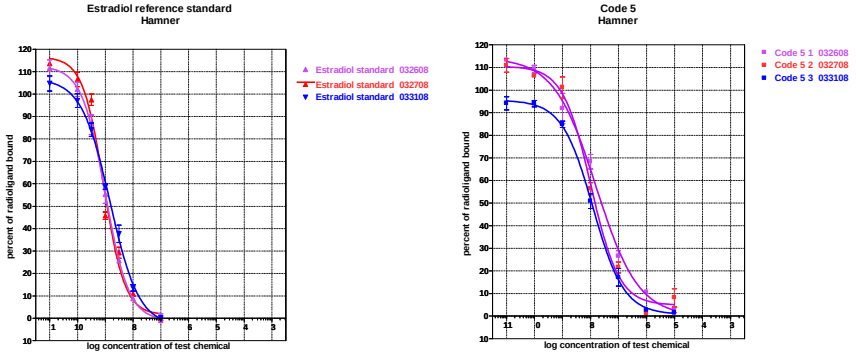


Figure 9. Summary of 17β-estradiol Standard Curves and Chemical 5 curves

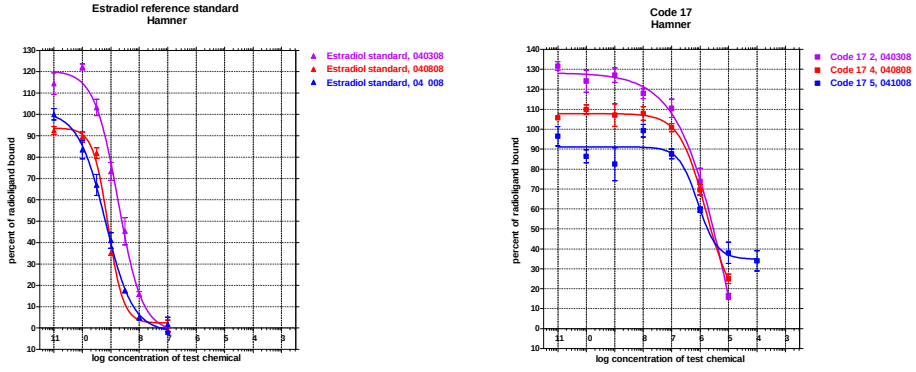


Figure 10. Summary of 17β-estradiol Standard Curves and Chemical 17 curves

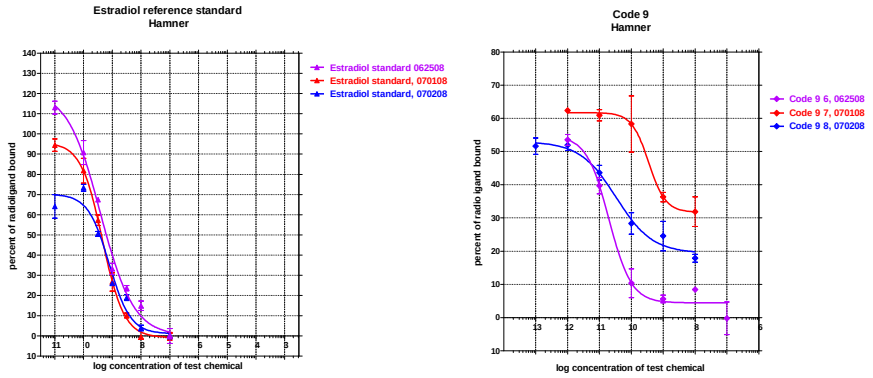


Figure 11. Summary of 17β-estradiol Standard Curves and Chemical 9 curves

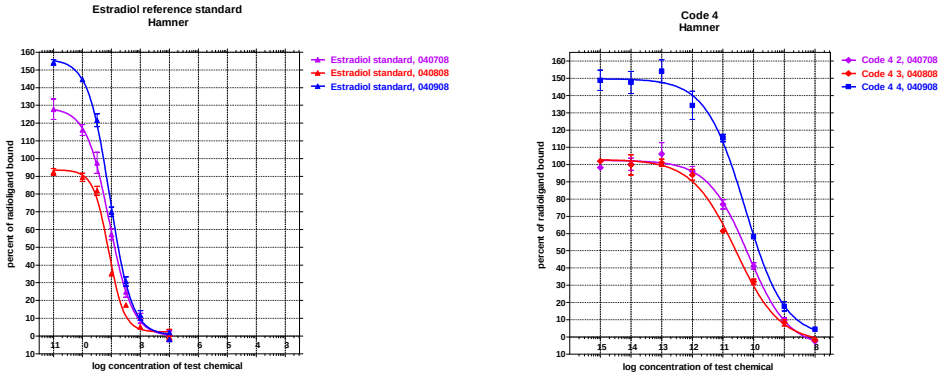


Figure 12. Summary of 17β-estradiol Standard Curves and Chemical 4 curves

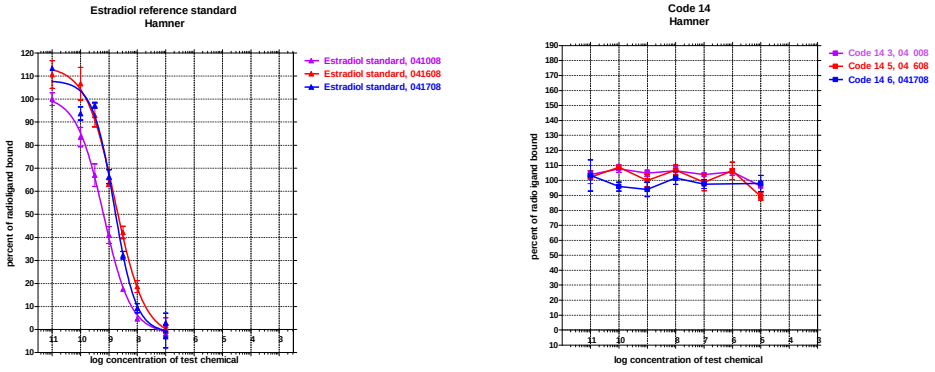


Figure 13. Summary of 17β-estradiol Standard Curves and Chemical 14 curves

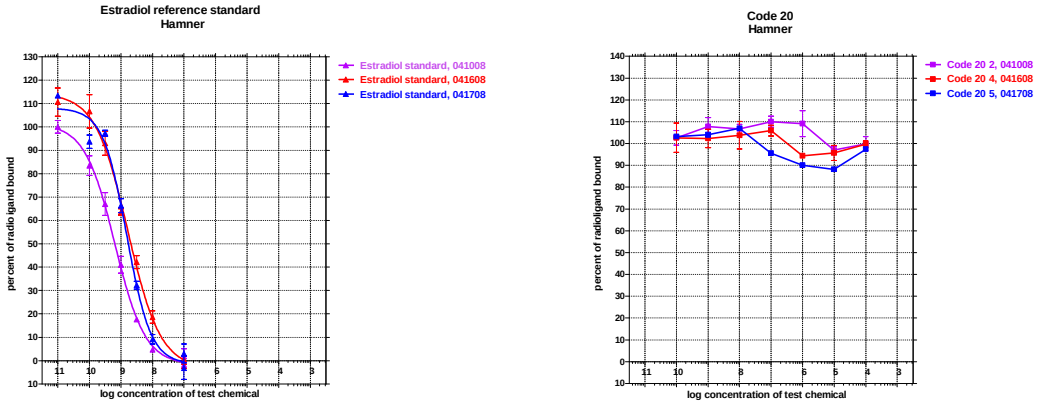


Figure 14. Summary of 17β-estradiol Standard Curves and Chemical 20 curves

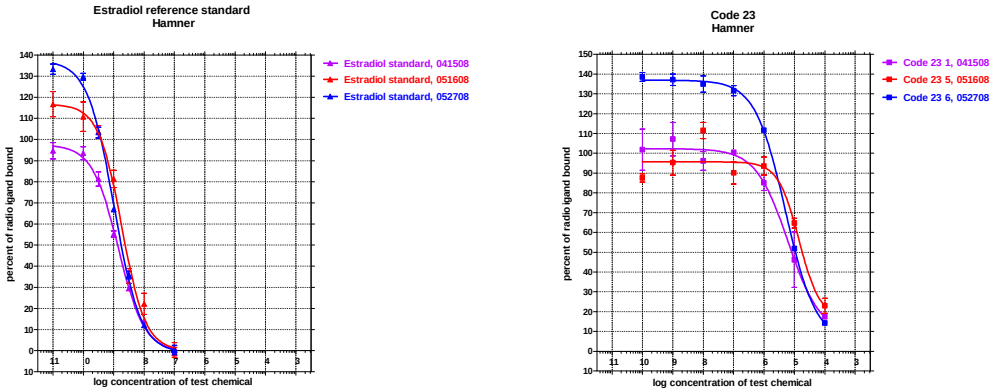


Figure 15. Summary of 17β-estradiol Standard Curves and Chemical 23 curves

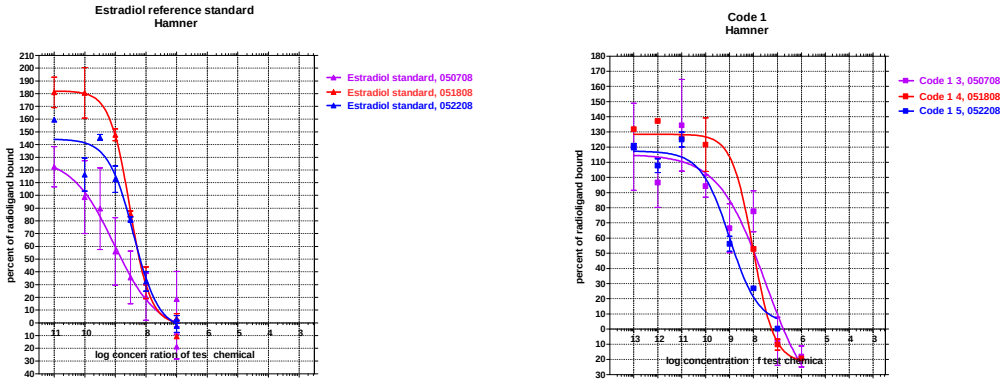


Figure 16. Summary of 17β-estradiol Standard Curves and Chemical 1 curves

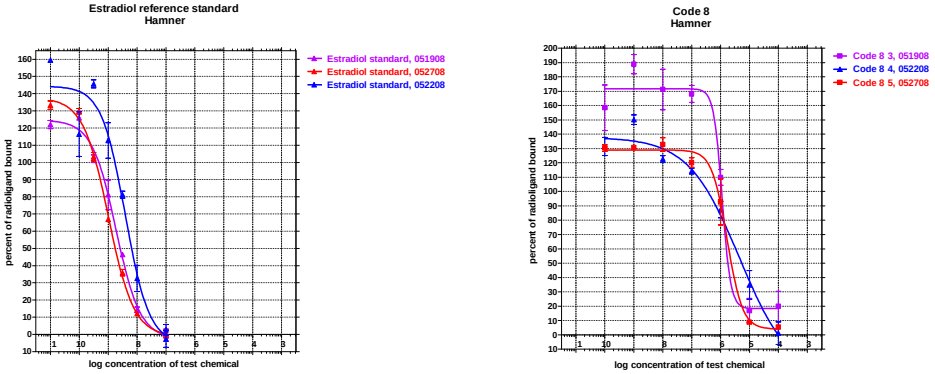


Figure 17. Summary of 17β-estradiol Standard Curves and Chemical 8 curves

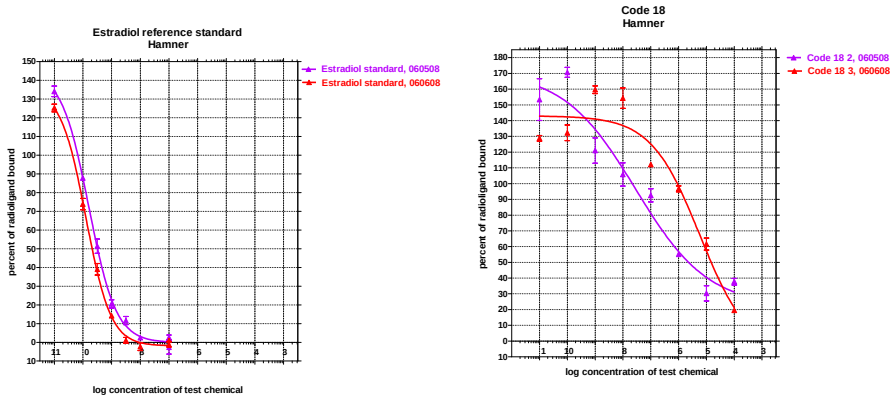


Figure 18. Summary of 17β-estradiol Standard Curves and Chemical 13 curves

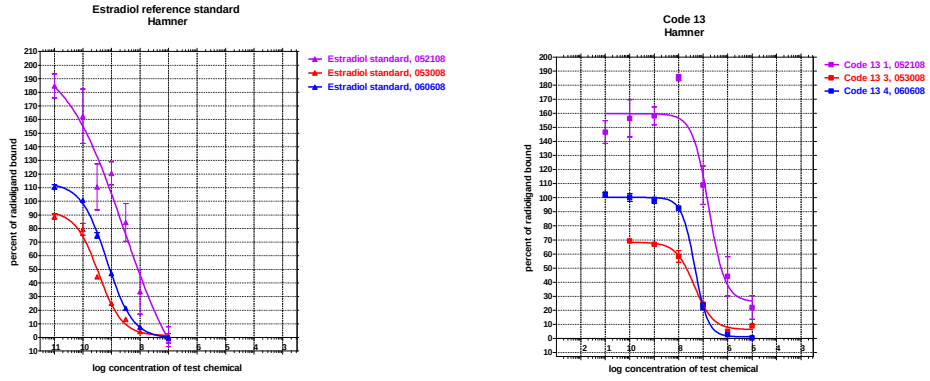


Figure 19. Summary of 17β-estradiol Standard Curves and Chemical 13 curves

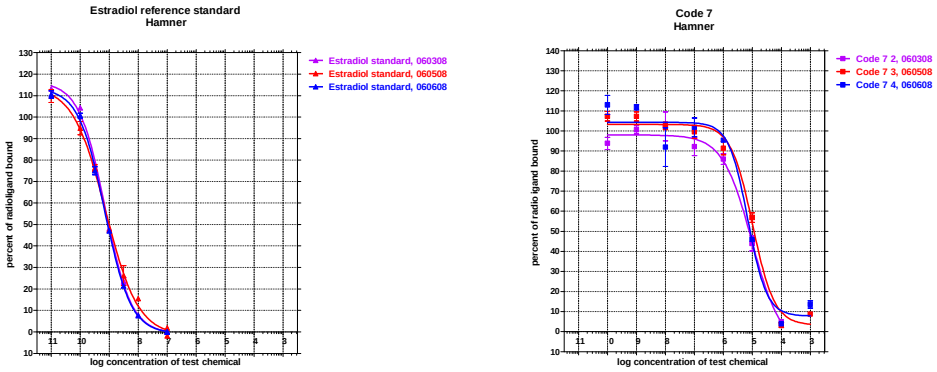


Figure 20. Summary of 17β-estradiol Standard Curves and Chemical 7 curves

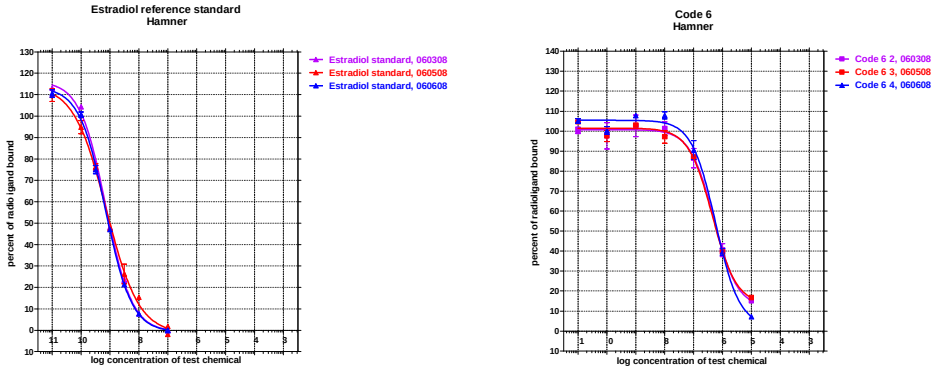


Figure 21. Summary of 17β-estradiol Standard Curves and Chemical 6 curves

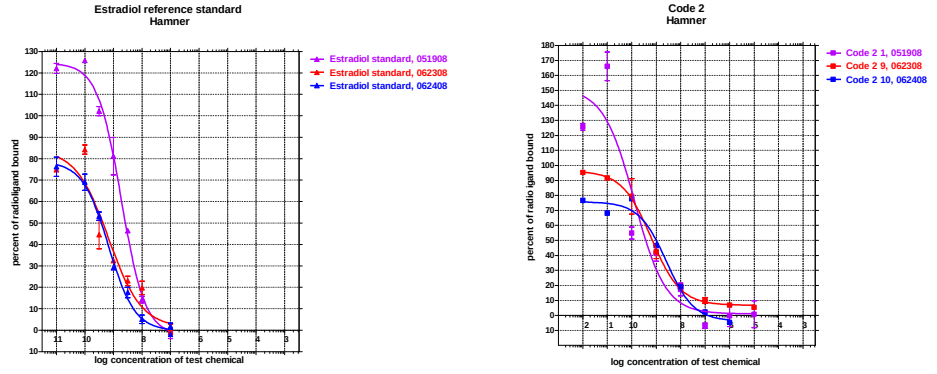


Figure 22. Summary of 17β-estradiol Standard Curves and Chemical 2 curves

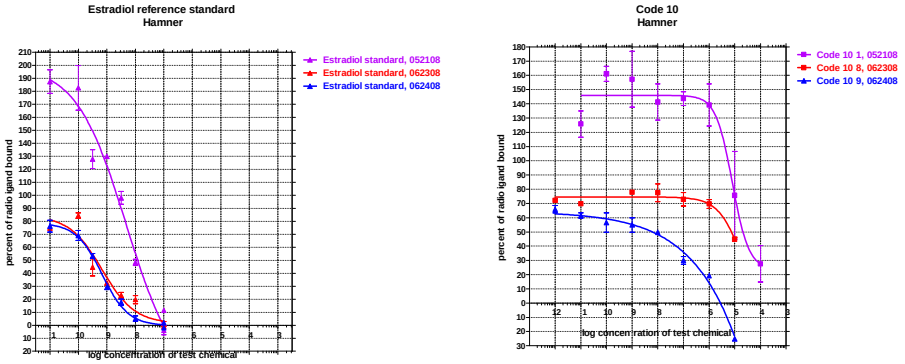


Figure 23. Summary of 17β-estradiol Standard Curves and Chemical 10 Curves

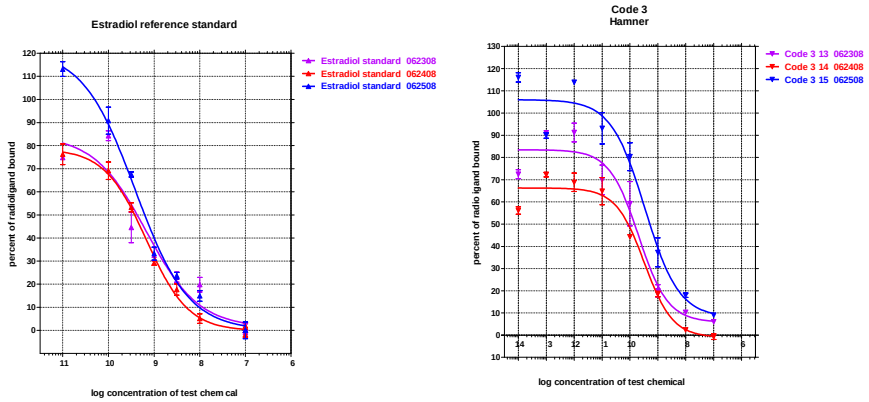


Figure 24. Summary of 17β-estradiol Standard Curves and Chemical 3 curves

Table 8. Summary of Competition Binding Data for Optional Chemicals

	Log (IC_{50})	Relative Binding Affinity	Hill Slope	Classification
CHEM 27 061808	Not Converged	ND	ND	NEGATIVE
CHEM 28 061808	Not Converged	ND	ND	NEGATIVE
CHEM 29 061808	-5.47	2.43E-04	-1.17	POSITIVE
CHEM 32 061908	-7.22	1.46E-02	-0.88	POSITIVE
CHEM 34 061908	-6.84	6.03E-03	-0.82	POSITIVE
CHEM 31 061908	Not Converged	ND	ND	NEGATIVE
CHEM 33 062308	-6.86	7.80E-03	-1.09	POSITIVE
CHEM 30 062308	Not Converged	ND	ND	NEGATIVE
CHEM 36 062308	-5.18	1.61E-04	-0.46	NEGATIVE
CHEM 37 062408	-6.78	6.27E-03	-1.01	POSITIVE
CHEM 38 062408	Not Converged	ND	ND	NEGATIVE
CHEM 39 062408	-5.43	2.84E-04	-1.03	POSITIVE
CHEM 40 062408	-6.92	8.77E-03	-0.96	POSITIVE
CHEM 42 062608	-7.14	2.14E-02	-0.70	POSITIVE
CHEM 35 062608	Not Converged	ND	ND	NEGATIVE
CHEM 43 062608	-7.03	1.65E-02	-0.89	POSITIVE
CHEM 44 062608	-5.30	3.09E-04	-1.02	POSITIVE
CHEM 45 062608	-4.29	3.13E-06	-0.45	NEGATIVE
CHEM 46 062608	Not Converged	ND	ND	NEGATIVE
CHEM 41 062608	-6.68	7.76E-04	-1.13	POSITIVE

ND-Not Determined

SECTION IV: DISCUSSION

All three reference controls (17β-estradiol, norethynodrel, and R1881) showed reproducible standard curves for the competitive binding assays with the 23 test agents. In addition, the IC_{50} values (average IC_{50} values for estradiol: -8.99±4.43E-02 and norethynodrel: -6.06±5.16E-02) were reproducible for each experiment and within the expected values for these compounds. Norethynodrel showed a low, but positive, relative binding affinity (1.30 E-03±9.59E-05) when compared to 17β-estradiol. The average within run SD for 17β-estradiol (4.82±4.54E-01) was within expected criteria (< 5%). The average within run SD for norethynodrel (5.03±5.59E-01) was within expected criteria (< 5.7%). The average within run SD for R1881 (6.20±6.85E-01) was within the expected criteria (< 10%). The representative average values for Bottom Plateau level (-0.93±3.78E-01), Top Plateau level (107.80±1.83E+00), and Hill slope (-0.99±4.44E-02) for 17β-estradiol was within criteria. The representative average values for Bottom Plateau level (4.55±1.76E+00), Top Plateau level (106.08±1.70E+00), and Hill slope (-1.04±4.37E-02) for norethynodrel were within expected criteria. Among the twenty-three (23) test agents that were assayed for their relative binding affinity when compared to 17β-estradiol, fifteen were found to be positive and eight were negative based on the criteria in section 9.7.4 of the EPA Protocol (page 44).

For the 20 optional chemicals 9 were negative and 11 were positive, based on the same criteria in section 9.7.4 of the EPA Protocol. The mean IC_{50} values for 17β-estradiol and norethynodrel from 6 competitive binding assays for optional chemicals was calculated to be -9.12±1.40E-01 and -5.99±5.76E-02, respectively. Norethynodrel showed a low, but positive relative binding affinity of 8.91E-04±1.53E-04 when compared to 17β-estradiol. The average within run SD for 17β-estradiol (2.98±3.05E-01) was within expected criteria (< 5%). The average within run SD for norethynodrel (3.79±4.35E-01) was within expected criteria (< 5.7%). The value for Bottom Plateau level (-0.90±5.08E-01), Top Plateau level (110.50±1.14E+01), and Hill slope (-0.89±2.78E-02) for 17β-estradiol was within criteria. The representative average values for Bottom Plateau level (11.2±3.68E+00), Top Plateau level (108.24±1.10E+01), and Hill slope (-0.91±9.34E-02) for norethynodrel were within expected criteria.

It is worth mentioning that many of the chemicals had to be rerun (shaded in red) for more than three/five runs as noted in the table below.

Chemical Code	Number of runs performed	Chemical Code	Number of runs performed	Chemical Code	Number of runs performed
1	5	9	8	17	5
2	10	10	9	18	3
3	15	11	3	19	4
4	8	12	5	20	5
5	3	13	4	21	3
6	4	14	6	22	3
7	4	15	3	23	8
8	5	16	5		

Some of the issues are addressed below:

1. For example, a significant number of runs (15 runs) were performed for Chemical Code # 3. The first run using the protocol criteria for making a standard curve yielded data which showed that the chemical had to be diluted extensively in order to attain a reasonable curve. The chemical was diluted to ten thousand-fold (top dose was 5×10^{-6}M) in order to achieve acceptable results. However, some of the variability in the data was also due to the difference in the ratio of ethanol/NSB in the later runs as there was a significant decrease in the percent specific activity in the ethanol samples when compared to the earlier runs. This observation is also relevant for a number of other chemical runs that were performed during the same period. However, when a different batch of [^{3}H]-17β-estradiol provided by RTI was used, the variability in the ratio of ethanol/NSB was resolved.
2. It has been observed consistently that the "Bottom Plateau" values for norethynodrel did not meet acceptable criteria objectives. It may be necessary to reexamine the doses selected for norethynodrel and/or change the criteria for acceptance.

3. Due to time constraints, many of the chemical runs were done back to back before one can analyze and examine the data which has resulted in performing many unanticipated runs.

APPENDIX A: Hamner Protocol, Amendments and QA Statement

Protocol for the *In Vitro* Estrogen Receptor Saturation Binding and Competitive Binding Assays Using Rat Uterine Cytosol

The Hamner Institutes for Health Sciences
P.O. Box 12137
Research Triangle Park, NC 27709

TITLE: Protocol for the *In Vitro* Estrogen Receptor Saturation Binding and Competitive Binding Assays Using Rat Uterine Cytosol

PRINCIPAL INVESTIGATOR: Sheela Sharma	Signature	Date 7/16/07
CO-INVESTIGATOR: Susan Ross	Signature	Date 7/16/07
CO-INVESTIGATOR:	N/A Signature	Date
CO-INVESTIGATOR:	N/A Signature	Date
APPROVED BY:	Health, Safety and Environment	Date 07AUG07
	Management for Funding	Date 7/16/07
	Quality Assurance (Reviewed Only)	Patricia O'Brien Pomerleau 08/07/2007
	RTI International (Sponsor) Sponsor's Representative	Date 8-10-07

Issue Date: 08/20/2007

N/A = Not Applicable

1. **BACKGROUND**

The Food Quality Protection Act of 1996 requires the Environmental Protection Agency (EPA) to develop and implement a screening program using validated test systems for determining the potential in humans for estrogenic effects from pesticides. One of the test systems being considered for inclusion in the screening program is an estrogen receptor (ER) binding assay. The ER binding assay protocol uses rat uterine cytosol (RUC) as source of receptor. For further details, see attached protocol dated April 2007 entitled "Protocol for the *In Vitro* Estrogen Receptor Saturation Binding and Competitive Binding Assays Using Rat Uterine Cytosol," hereafter referred to as "the EPA protocol."

2. **OBJECTIVE**

The two components of this project are: (a) generate data for the reference chemical (17β-estradiol) and weak positive control (norethynodrel) within criteria for acceptable performance by using the EPA protocol and (b) generate data for up to 23 test chemicals using the same EPA protocol.

3. **IDENTIFICATION, HANDLING AND STORAGE OF TEST AGENTS**

Test chemicals as well as any pertinent information regarding test chemical composition and storage requirements will be provided by the Sponsor. The test chemicals are anticipated to be soluble in ethanol or DMSO. The primary routes of exposure include skin absorption, ingestion and inhalation. Personal protective equipment including safety glasses, gloves, and protective clothing will be employed.

Reagents and solutions will be labeled with identity, concentration, expiration date, storage condition, and initials of preparer.

4. **EXPERIMENTAL DESIGN/METHODS**

For details of design/methods, critical materials needed, how assays with test chemicals are run, record keeping, and what should be included in the test reports refer to section(s) 4.0–9.9 of the EPA protocol.

4.1 **Preparation of RUC.**

Rat uteri will be obtained from a reputable supplier. Uteri will be homogenized and ER isolated from the supernatant. Protein concentration of the purified ER will be determined. No IACUC statement will be required; and no animal care or animal health issues will need to be included.

4.2 **Demonstration of acceptable performance of RUC preparation and laboratory technique.**

Prior to routinely conducting the ER competitive binding assays, the RUC must be shown to be performing correctly in the laboratory in which it will be used. This can be accomplished in two steps as follows:

1) Conduct a saturation radioligand binding assay to demonstrate ER specificity and saturation. Nonlinear regression analysis of these data and the subsequent Scatchard plot should document ER binding affinity of the radioligand (Kd) and the number of receptors (Bmax) for a particular batch of uterine cytosol.

2) Conduct a competitive binding assay using 17ß-estradiol and norethynodrel, which have known affinities for the ER. Comparison of IC50 values (i.e., the concentration of a substance that inhibits [3H]-17ß-estradiol binding by 50%) from these assays with expected values will assist in documenting that the laboratory is performing the assay correctly.

5. **DATA COLLECTION**

Each assay (saturation and competitive binding) consists of at least three non-consecutive runs and each run contains three replicates. The data generated will be exported to an Excel spreadsheet and formatted for reporting purposes.

6. **DATA ANALYSIS AND INTREPRETATION**

Considerations for evaluating saturation binding assays are given in Section 8.6 of the EPA protocol but there are no specific performance criteria. Criteria for acceptable performance of known standards in the competitive binding assay are discussed in Section 9.7.3. Before running unknown test chemicals, a lab must meet the performance criteria for each of the standards (17ß-estradiol and norethynodrel) in order to indicate that a technician is capable of performing the assay correctly and consistently.

At least one successful Saturation Binding Assay must be performed each time a new batch of RUC is used in Competitive Binding Assays.

GraphPad Prism, version 4.03 and Microsoft Office XP Excel 2002 will be used for data analysis.

6.1 **Criteria for acceptability of saturation binding assay.**

ER saturation binding experiments measure total, non-specific, and specific binding of increasing concentrations of [^{3}H]-17β-estradiol under conditions of equilibrium. A graph of specific [^{3}H]-17β-estradiol binding versus radioligand concentration should reach a plateau for maximum specific binding indicative of saturation of the ER with the radioligand. In addition, analysis of the data should document the binding of the [^{3}H]-17β-estradiol to a single, high-affinity binding site (i.e., Kd = 0.05 to 0.5 nM and a linear Scatchard plot).

6.2 **Criteria for acceptability of competitive binding assay.**

The ER competitive binding assay measures the binding of a single concentration of [^{3}H]-17β-estradiol in the presence of increasing concentrations of a test substance. The competitive binding curve is plotted as specific [^{3}H]-17β-estradiol binding versus the concentration ($\log_{10}$ units) of the competitor. The concentration of the test substance that inhibits 50% of the maximum specific [^{3}H]-17β-estradiol binding is estimated and recorded as the IC_{50} value.

7. **RECORDS**

Experimental notes and data will be entered into The Hamner's laboratory notebook(s) and 3 ring binder(s) along with descriptions of procedures used, according to SOP QUA-007 and stored in Lab 210 and/or office 137D/E. After completion of the study, notebooks and other records will be archived at The Hamner.

8. **QUALITY ASSURANCE**

Both quality assurance (QA) and quality control (QC) procedures are integral parts of our research program. Research described in this protocol will be conducted under The Hamner's Research Quality Standards. These standards include: (1) scientifically reviewed protocols that are administratively approved for meeting requirements in data quality and safety regulations; (2) standardized laboratory notebooks and data recording procedures; (3) documented methods and/or SOPs for all experimental procedures including calibration of instruments; (4) all generated data reviewed by a member of the scientific staff for accuracy; and (5) a Quality Assessment audit of the in life phase and/or the draft report conducted by The Hamner's independent Quality Assurance group (SOP QUA-021). The Hamner's QA and QC processes assessing overall study performance and records ensure that conduct of the proposed research satisfies the intended protocol's objectives.

All assays will be conducted in the "spirit" of the Good Laboratory Practice (GLP) Standards as defined in the Federal Register (40 CFR, Part 160). All procedures will be performed in accordance with the EPA Protocol and with the Standard Operating Procedures (SOPs) of the Preclinical Prevention Research Program of The Hamner Institutes for Health Sciences.

9. **HEALTH AND SAFETY**

This study will be conducted in accordance with procedures set forth by The Hamner's Health, Safety, and Environment Office. All chemical and radioactive wastes will be handled and stored according to SOP HSE-034 and RAD-004. Study personnel will review the material safety data sheets (MSDS) for hazardous chemicals used in this study according to SOP HSE-003, controlled substances will be handled according to SOP HSE-024, and radioactive substances will be handled according to SOP RAD-005. A copy of the MSDS will be included in the study manual.

All chemical and their MSDSs along with other pertinent information will be sent to The Hamner from the Sponsor and received by the Health & Safety Department. Susan Ross will have custodial responsibility of all chemicals in use at The Hamner.

Upon completion of the study, all remaining chemicals (radioactive or non-radioactive) including all waste generated by this study will be returned to the Sponsor.

10. **PERSONNEL ASSIGNMENTS**

Principal Investigator	S. Sharma
Senior Research Associate	S. Ross
Research Investigators	B. Wetmore/P. Gao

11. **REPORTS**

A weekly status report and a monthly progress report will be submitted to the Sponsor, indicating the stage of completion of the requested assays. The final report will be submitted approximately 15 days before completion of the contract.

12. **TIMELINE**

Project will begin in June 2007 and be completed by November 2007. This timeline may be modified by consensus of the Sponsor and The Hamner.

13. **REFERENCES**

Cheng, Y and Prusoff, W.H. (1973) Relationship between the inhibition constant (Ki) and the concentration of inhibitor which causes 50 percent inhibition (IC_{50}) of an enzymatic reaction. *Biochem. Pharmacol*. 22(23):3099–108.

Hulme, E.C. and Birdsall, N.J.M. (1992) Strategy and tactics in receptor-binding studies. In: *Receptor ligand interactions: a practical approach.* Ed., E.C. Hulme. IRL Press, New York. pp. 63–76.

Kuiper, G., Carlsson, B., Grandien, K., Enmark, E., Haggblad, J., Nilsson, S., Gustafsson, J. (1997) Comparison of the ligand binding specificity and transcript tissue distribution of estrogen receptors α and β. *Endocrinology* 138(3):863–870.

Kuiper, G., Lemmen, J., Carlsson, B., Corton, J.C., Safe, S., Van Der Saag, P. Van Der Burg, B., Gustafsson, J. (1998) Interaction of estrogenic chemicals and phytoestrogens with estrogen receptor β. *Endocrinology* 139(10):4252–4263.

14. **ATTACHMENTS**

a. Protocol dated April 2007 entitled "Protocol for the *In Vitro* Estrogen Receptor Saturation Binding and Competitive Binding Assays Using Rat Uterine Cytosol."
b. Radioactive Materials Use Authorization form will be kept on file at The Hamner.

Amendment

The Hamner Institutes for Health Sciences

PROTOCOL AMENDMENT NO.: 07024A1 SMP 9/12/07 RE

Protocol Number: 07024

Protocol Title: Protocol for the *In Vitro* Estrogen Receptor Saturation Binding and Competitive Binding Assays Using Rat Uterine Cytosol

Text/Attachment to be Amended:

The EPA Protocol, page 16 and 17 of 61:
2) Prepare a primary stock in absolute ethanol. For example, since the highest concentration in Column E is 30 nM, a stock concentration that is 300 nM in absolute ethanol would be appropriate. (Other concentrations could be used, but note that if the stock concentration in absolute ethanol is too low, the concentration of ethanol in the final assay tube could exceed the 3% limit for ethanol. See Section 9.2.1. Remember that there is ethanol in the buffer solution that contributes to the concentration of ethanol in the final assay tube.)

Amended to Read:
The EPA Protocol, page 16 of 61:
2) Prepare a primary stock in TEDG + PMSF buffer. For example, since the highest concentration in Column E is 30 nM, a stock concentration that is 300 nM would be appropriate.

Reason for Amendment: Discrepancy noted by RTI and confirmed as an inconsistency by EPA (see attached email communication dated 9-10-07).

Accompanying Amendments: Email communication from Carol Sloan.

Study Director / Principal Investigator	9/27/07 **Date**
Management for Funding	9/27/07 **Date**
Sponsor's Representative	9-28-07 **Date**

QAF-26.2

PROTOCOL AMENDMENT NO.: 07024-2

Protocol Number: 07024

Protocol Title: Protocol for the *In Vitro* Estrogen Receptor Saturation Binding and Competitive Binding Assays Using Rat Uterine Cytosol

Text/Attachment to be Amended:

6. DATA ANALYSIS AND INTREPRETATION
GraphPad Prism, version 4.03 and Microsoft Office XP Excel 2002 will be used for data analysis.

Amended to Read:

GraphPad Prism, version 4.03 or newer version, and Microsoft Office XP Excel 2002, or newer version, will be used for data analysis.

Reason for Amendment:

Newer versions of software made available.

/ Susan M. Ross 3/6/08
Study Director / Principal Investigator **Date**

3/6/08
Management for Funding **Date**

Carl Sloan 3-24-08
Sponsor's Representative **Date**

QAF-26.2

Statement of Quality Assurance

EPA contract EP-W-06-026, Endocrine Disruptor Screening Program: Laboratory Assay Validation Services, Task Order 6, Second Inter-Laboratory Validation of the Estrogen Receptor (ER) Binding Assay (Rat Uterine Cytosol) during Task 7, Test Coded Chemicals

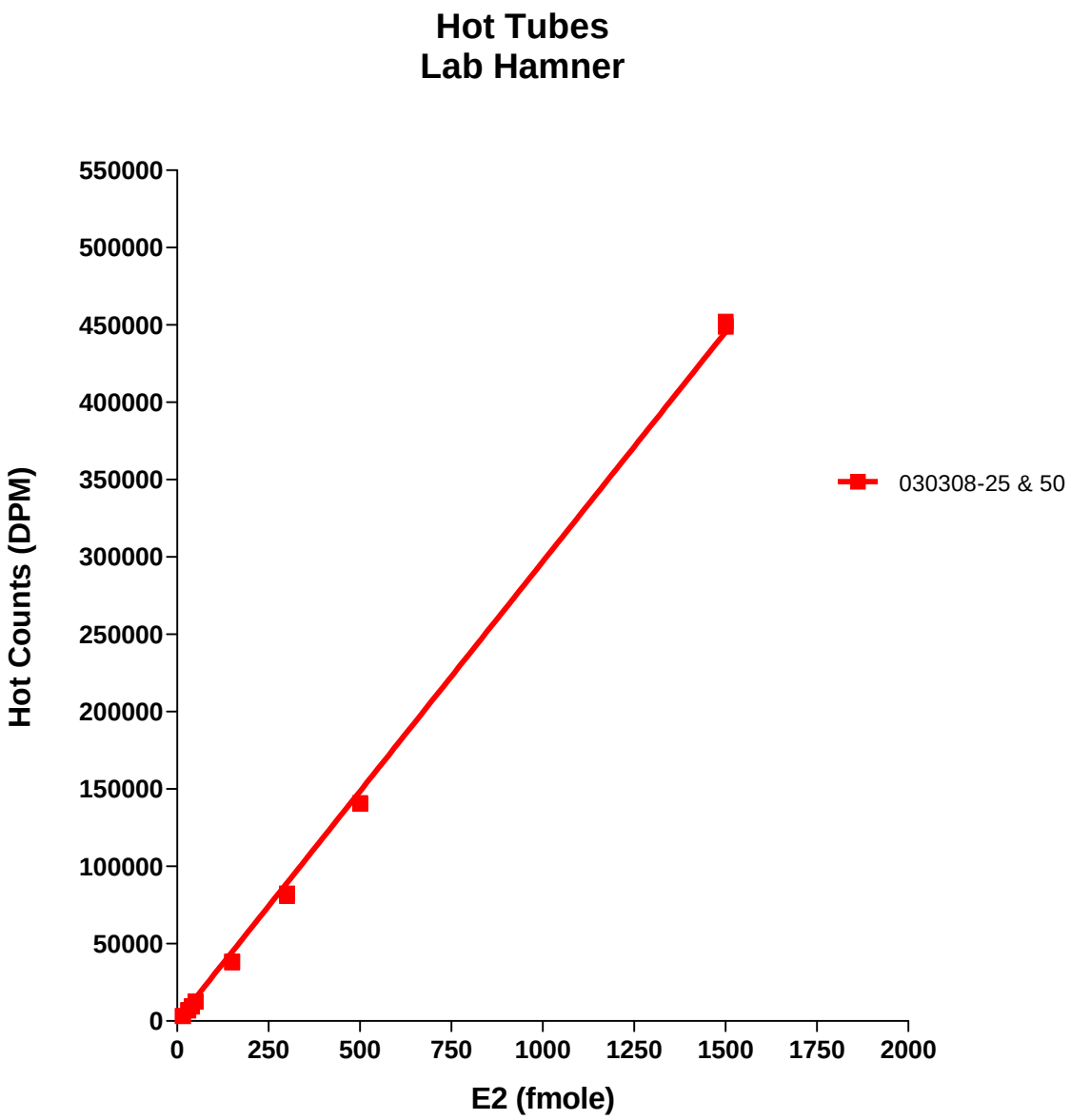
The above mentioned study was conducted under the Research Quality Standards of The Hamner (The Hamner Institutes) Institutes for Health Sciences. These standards are designed to help assure the quality and integrity of the studies. Quality control procedures are integral parts of our research program. The study was subjected to quality assessments conducted by The Hamner Institutes' independent Quality Assurance personnel (see below).

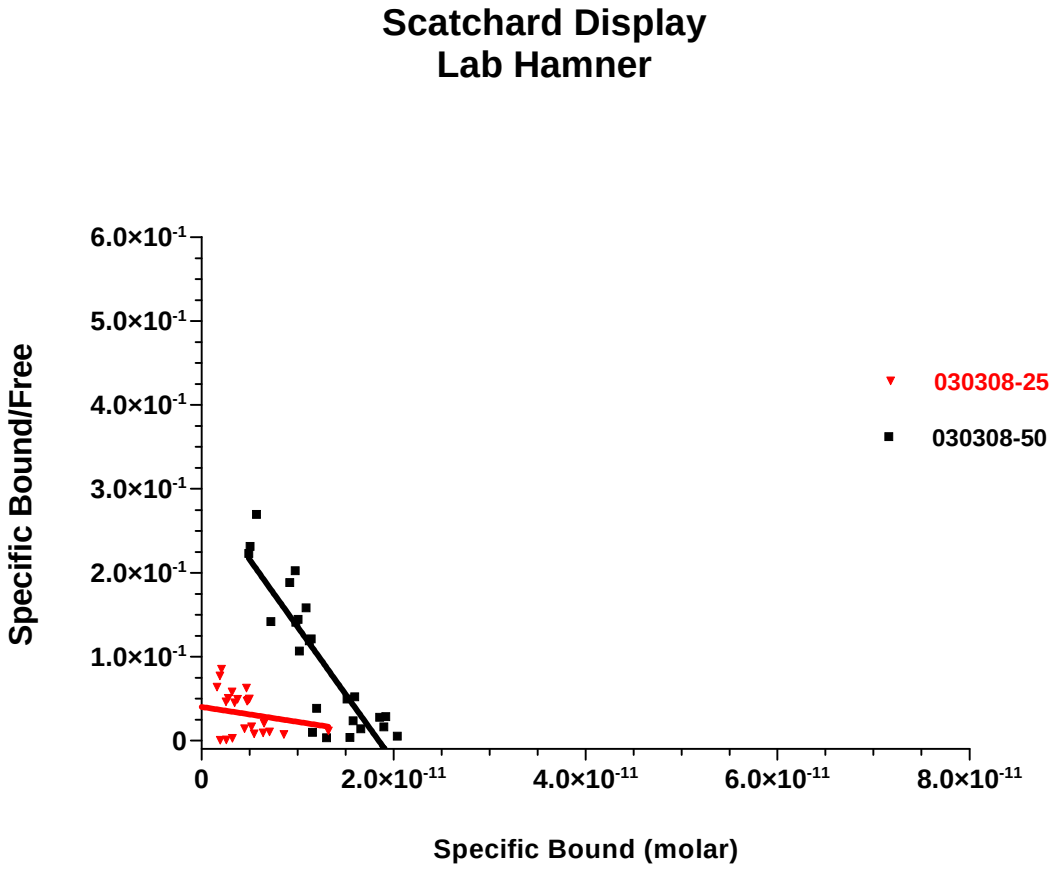
Quality Assessment Date	**Phase** Reviewed	**Quality Assurance Personnel** Performing Quality Assessment
September 04-05, 2007	ER Saturation Binding Assay	Ann Matrone
October 09, 2007	Competitive Binding Assay	Ann Matrone
October 24-25, 2007	Report and Data	Ann Matrone and Patricia O'Brien Pomerleau
April 02, 08 and 11, 2008	ER Competitive Binding Assay And Data	Ann Matrone

Patricia O'Brien Pomerleau June 09, 2008

Patricia O'Brien Pomerleau, MS — Date
Quality Assurance Director, CIIT

APPENDIX B: Raw Data and Prism Files for Saturation Binding Assay


Hot Tubes
Lab Hamner
Hot Counts (DPM)
550000
500000
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
0
250
500
750
1000
1250
1500
1750
2000
E2 (fmole)
030308-25 & 50


Scatchard Display
Lab Hamner
Specific Bound/Free
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5.0×10-1
4.0×10-1
3.0×10-1
2.0×10-1
1.0×10-1
0
0
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4.0×10-11
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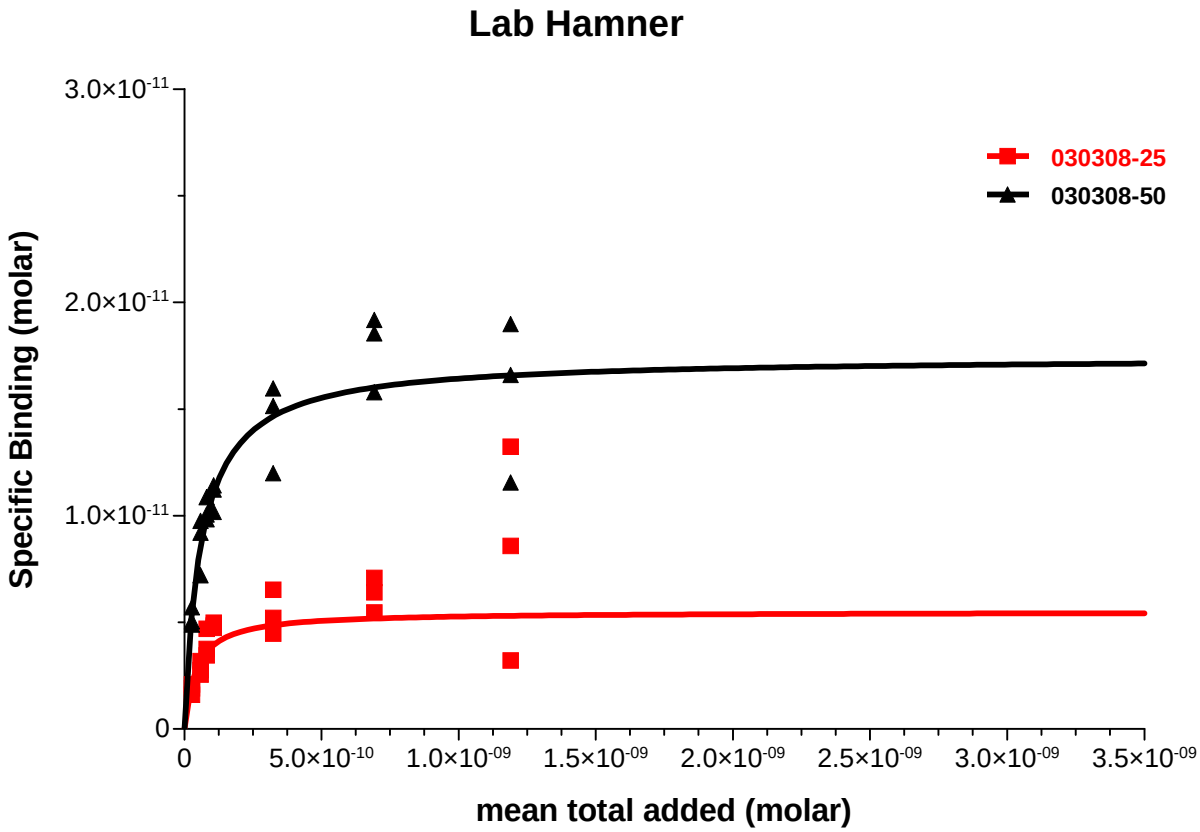
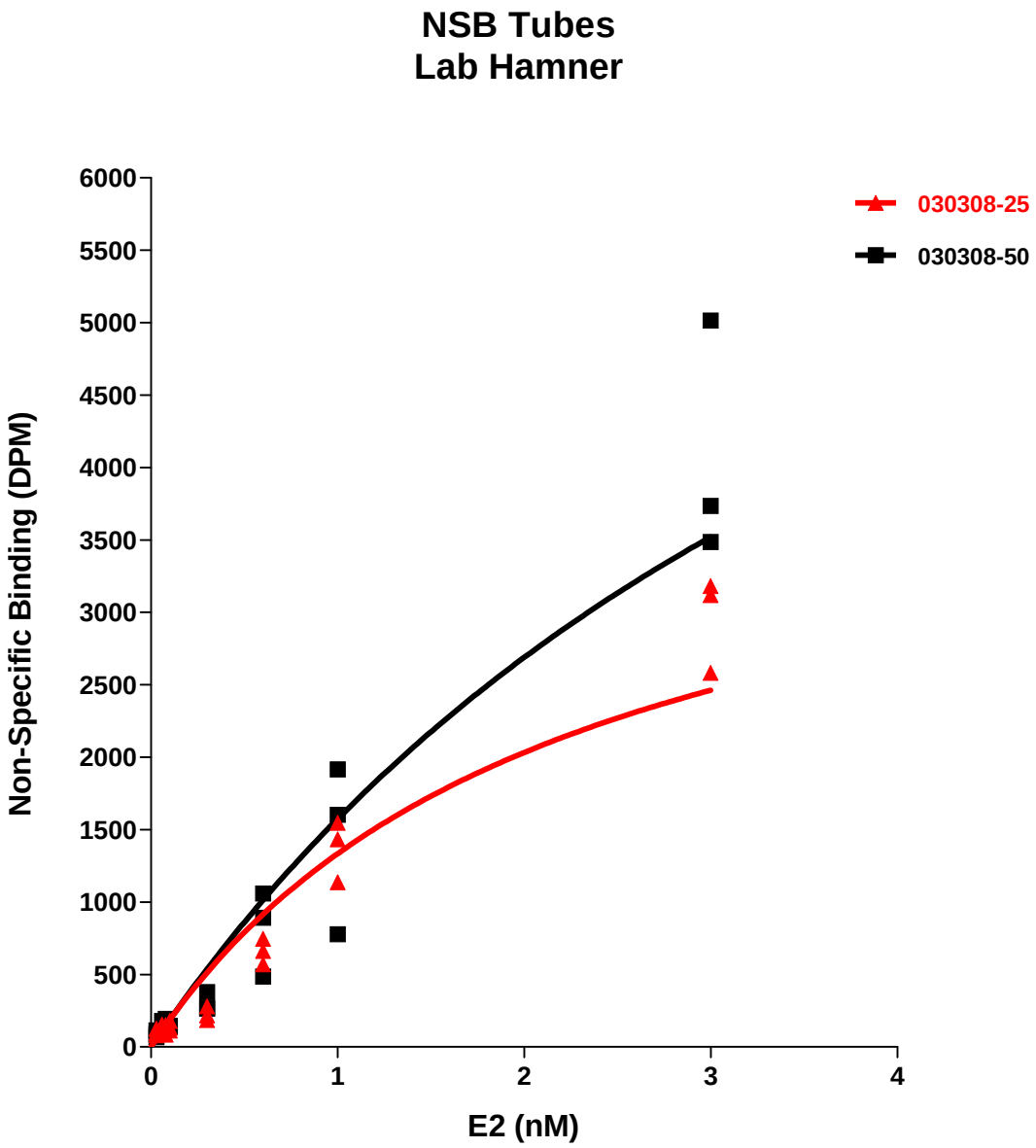
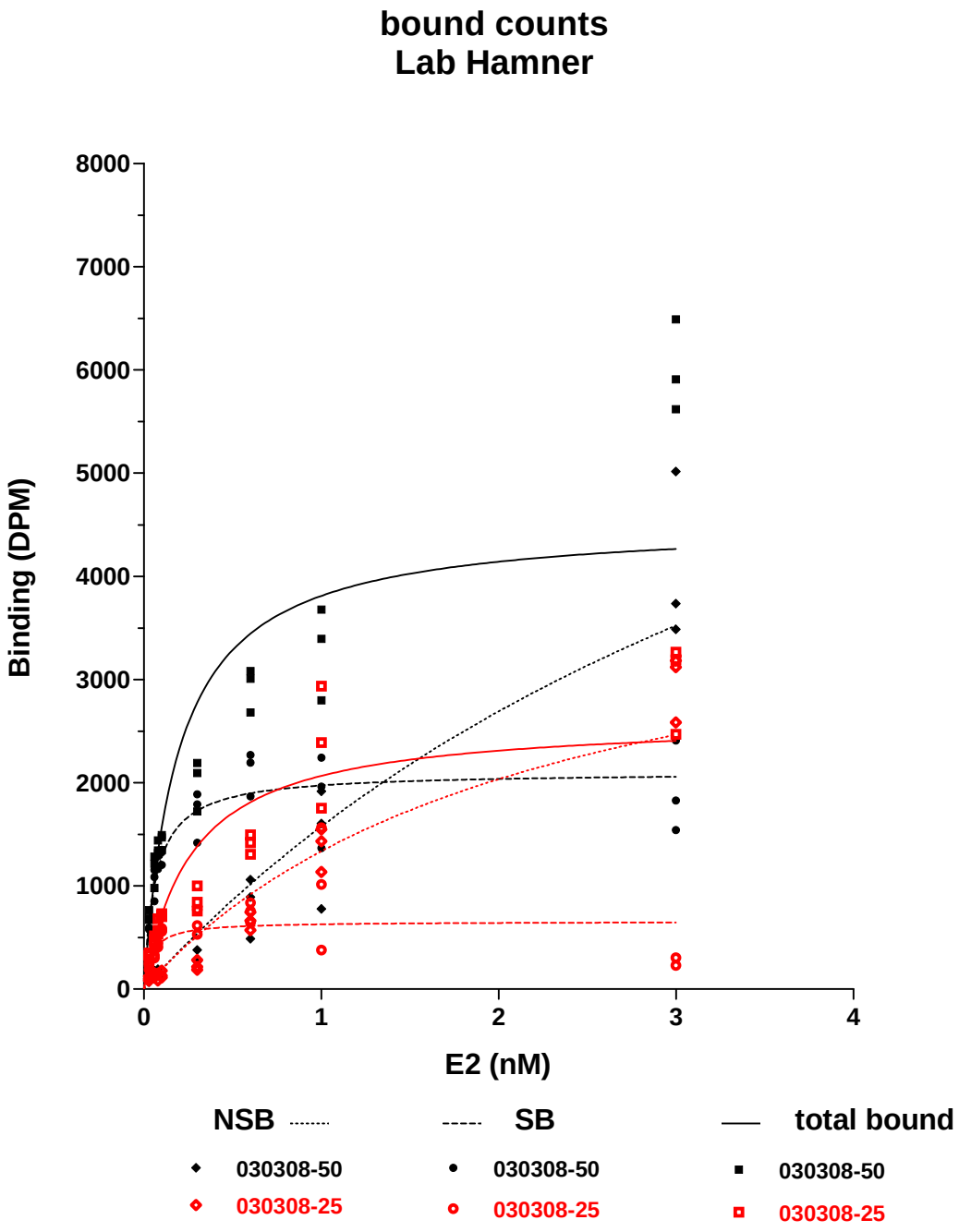
Specific Bound (molar)
030308-25
030308-50

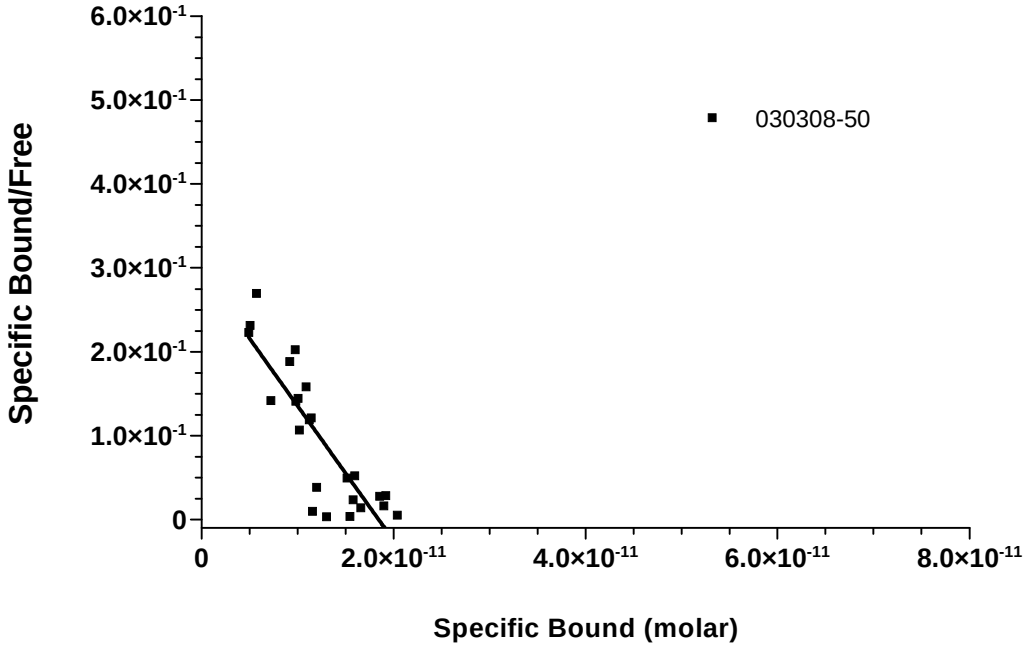


	030308-25	030308-50
BMAX	5.494e-012	2.851e-011
KD	4.197e-011	3.083e-010
Std. Error		
BMAX	9.911e-013	6.650e-013
KD	2.473e-011	1.115e-011
95% Confidence Intervals		
BMAX	3.438e-012 to 7.550e-012	2.713e-011 to 2.989e-011
KD	-9.312e-012 to 9.325e-011	2.852e-010 to 3.314e-010
Goodness of Fit		
Degrees of Freedom	22	22
R^2 (unweighted)	0.09708	0.9899
Weighted Sum of Squares ($1/Y^2$)	7.291	0.05817
Absolute Sum of Squares	2.032e-022	1.632e-023
Sy.x	0.5757	0.05142
Number of points		
Analyzed	24	24

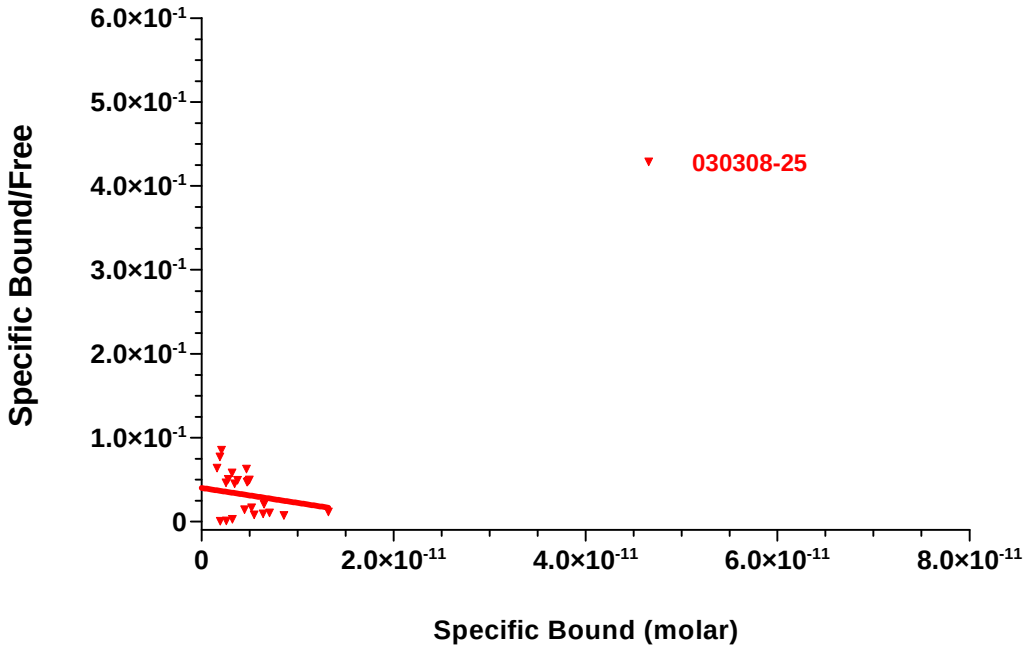

NSB Tubes
Lab Hamner
030308-25
030308-50
Non-Specific Binding (DPM)
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
0
1
2
3
4
E2 (nM)


bound counts
Lab Hamner
Binding (DPM)
8000
7000
6000
5000
4000
3000
2000
1000
0
0
1
2
3
4
E2 (nM)
NSB
SB
total bound
030308-50
030308-25
030308-50
030308-25
030308-50
030308-25

Scatchard Display
Lab Hamner
030308
0.05 mg/tube



Scatchard Display
Lab Hamner
030308
0.025 mg/tube



Laboratory Code Hamner

ER Saturation Assay

72 assay tubes

Provide information in all blue cells in columns N and DM

If the DPM value for a tube was judged unreliable,
include the DPM value in column N, and
provide a reason in column Q;
the "TRUE" in column P will automatically change to "FALSE".

For your convenience, data reduction is performed in columns V through BY, and the values needed for analysis are presented in columns S, T and U; Prism-ready data in CF - CM.

Cells in column R are presented with a grey background if the total binding exceeds 10% of the hot added at that concentration, the cytosol concentration is probably too high for good competitive assays

Laboratory Code:	Hamner	
Run identification:	030308	
Assay start date:	3/3/2008	
Tracer lot number:	3589221	
Specific activity on day of assay:	106.54	**Ci/mmole**
Cytosol lot or vial number:	PREP-3	
protein (cytosol) per tube:	25	**ug**
protein (cytosol) per tube:	0.025	**mg**
KD	4 20E-02	**nM**
Bmax	10.988	**fmole/100 ug**
volume of ethanol counted	1	**mL**
multiply DPM in sample by	1.5	
total volume in tubes	500	**uL**

Saturation Assay Tube Layout

Position	Replicate	Tube Type Code	Hot E2 Initial Concentration (nM)	Hot E2 Volume (uL)	Hot E2 Final Concentration (nM)	Cold E2 Initial Concentration (nM)	Cold E2 Volume (uL)	Cold E2 Final Concentration (nM)	Buffer Volume (uL)	Receptor Volume (uL)	raw dpm	dpm for 1.5 mL	Use this value?	Notes to explain why "Use this value" is set to "FALSE"	Ten Percent Rule
1	1	H	0.3	50	0.03	—	—	—	350	100	218.67	328.005	TRUE		10.0%
2	2	H	0.3	50	0.03	—	—	—	350	100	194.41	291.615	TRUE		8.9%
3	3	H	0.3	50	0.03	—	—	—	350	100	233.06	349.59	TRUE		10.7%
4	1	H	0.6	50	0.06	—	—	—	350	100	344.38	516.57	TRUE		7.4%
5	2	H	0.6	50	0.06	—	—	—	350	100	295.11	442.665	TRUE		6.3%
6	3	H	0.6	50	0.06	—	—	—	350	100	312.08	468.12	TRUE		6.7%
7	1	H	0.8	50	0.08	—	—	—	350	100	356.25	534 375	TRUE		5.6%
8	2	H	0.8	50	0.08	—	—	—	350	100	380.1	570.15	TRUE		6.0%
9	3	H	0.8	50	0.08	—	—	—	350	100	454.46	681.69	TRUE		7.1%
10	1	H	1.0	50	0.10	—	—	—	350	100	467.83	701.745	TRUE		5.6%
11	2	H	1.0	50	0.10	—	—	—	350	100	476.62	714.93	TRUE		5.7%
12	3	H	1.0	50	0.10	—	—	—	350	100	486.87	730 305	TRUE		5.8%
13	1	H	3.0	50	0.30	—	—	—	350	100	562.88	844.32	TRUE		2.2%
14	2	H	3.0	50	0.30	—	—	—	350	100	505.33	757 995	TRUE		2.0%
15	3	H	3.0	50	0.30	—	—	—	350	100	666.75	1000.125	TRUE		2.6%
16	1	H	6.0	50	0.60	—	—	—	350	100	998.16	1497.24	TRUE		1.8%
17	2	H	6.0	50	0.60	—	—	—	350	100	944.91	1417 365	TRUE		1.7%
18	3	H	6.0	50	0.60	—	—	—	350	100	870.91	1306 365	TRUE		1.6%
19	1	H	10.0	50	1.00	—	—	—	350	100	1592.28	2388.42	TRUE		1.7%
20	2	H	10.0	50	1.00	—	—	—	350	100	1168.33	1752.495	TRUE		1.2%
21	3	H	10.0	50	1.00	—	—	—	350	100	1958.03	2937.045	TRUE		2.1%
22	1	H	30.0	50	3.00	—	—	—	350	100	1646.22	2469.33	TRUE		0.5%
23	2	H	30.0	50	3.00	—	—	—	350	100	2127.72	3191.58	TRUE		0.7%
24	3	H	30.0	50	3.00	—	—	—	350	100	2177 82	3266.73	TRUE		0.7%
25	1	HC	0.3	50	0.03	30	50	3	300	100	53.69	80 535	TRUE		
26	2	HC	0.3	50	0.03	30	50	3	300	100	83.59	125 385	TRUE		
27	3	HC	0.3	50	0.03	30	50	3	300	100	65.46	98.19	TRUE		
28	1	HC	0.6	50	0.06	60	50	6	300	100	76.02	114.03	TRUE		
29	2	HC	0.6	50	0.06	60	50	6	300	100	101.38	152.07	TRUE		
30	3	HC	0.6	50	0.06	60	50	6	300	100	102.57	153 855	TRUE		
31	1	HC	0.8	50	0.08	80	50	8	300	100	95.83	143.745	TRUE		
32	2	HC	0.8	50	0.08	80	50	8	300	100	100.25	150 375	TRUE		
33	3	HC	0.8	50	0.08	80	50	8	300	100	55.97	83 955	TRUE		
34	1	HC	1.0	50	0.10	100	50	10	300	100	118.89	178 335	TRUE		
35	2	HC	1.0	50	0.10	100	50	10	300	100	87.56	131.34	TRUE		
36	3	HC	1.0	50	0.10	100	50	10	300	100	75.35	113.025	TRUE		
37	1	HC	3.0	50	0.30	300	50	30	300	100	187.28	280.92	TRUE		
38	2	HC	3.0	50	0.30	300	50	30	300	100	144.62	216.93	TRUE		
39	3	HC	3.0	50	0.30	300	50	30	300	100	124.36	186.54	TRUE		
40	1	HC	6.0	50	0.60	600	50	60	300	100	497.43	746.145	TRUE		
41	2	HC	6.0	50	0.60	600	50	60	300	100	441.8	662.7	TRUE		
42	3	HC	6.0	50	0.60	600	50	60	300	100	380.47	570.705	TRUE		
43	1	HC	10.0	50	1.00	1000	50	100	300	100	955.4	1433.1	TRUE		
44	2	HC	10.0	50	1.00	1000	50	100	300	100	757.63	1136.445	TRUE		
45	3	HC	10.0	50	1.00	1000	50	100	300	100	1031.39	1547.085	TRUE		
46	1	HC	30.0	50	3.00	3000	50	300	300	100	2078.83	3118 245	TRUE		
47	2	HC	30.0	50	3.00	3000	50	300	300	100	1722.12	2583.18	TRUE		
48	3	HC	30.0	50	3.00	3000	50	300	300	100	2120.82	3181.23	TRUE		
49	1	Hot	0.3	50	0.03	—	—	—	—	—	3249.64	3249.64	TRUE		

50	2	Hot	0.3	50	0.03	—	—	—	—	—	3315.85	3315.85	TRUE	
51	3	Hot	0.3	50	0.03	—	—	—	—	—	3241.3	3241.3	TRUE	
52	1	Hot	0.6	50	0.06	—	—	—	—	—	6810.14	6810.14	TRUE	
53	2	Hot	0.6	50	0.06	—	—	—	—	—	6912.33	6912.33	TRUE	
54	3	Hot	0.6	50	0.06	—	—	—	—	—	7234.69	7234.69	TRUE	
55	1	Hot	0.8	50	0.08	—	—	—	—	—	9508.31	9508.31	TRUE	
56	2	Hot	0.8	50	0.08	—	—	—	—	—	9773.82	9773.82	TRUE	
57	3	Hot	0.8	50	0.08	—	—	—	—	—	9406.59	9406.59	TRUE	
58	1	Hot	1.0	50	0.10	—	—	—	—	—	12620	12620	TRUE	
59	2	Hot	1.0	50	0.10	—	—	—	—	—	12627.1	12627.1	TRUE	
60	3	Hot	1.0	50	0.10	—	—	—	—	—	12566.5	12566.5	TRUE	
61	1	Hot	3.0	50	0.30	—	—	—	—	—	38501.3	38501.3	TRUE	
62	2	Hot	3.0	50	0.30	—	—	—	—	—	38391	38391	TRUE	
63	3	Hot	3.0	50	0.30	—	—	—	—	—	37954.3	37954.3	TRUE	
64	1	Hot	6.0	50	0.60	—	—	—	—	—	80799.9	80799.9	TRUE	
65	2	Hot	6.0	50	0.60	—	—	—	—	—	82559.9	82559.9	TRUE	
66	3	Hot	6.0	50	0.60	—	—	—	—	—	82251.9	82251.9	TRUE	
67	1	Hot	10.0	50	1.00	—	—	—	—	—	140382	140382	TRUE	
68	2	Hot	10.0	50	1.00	—	—	—	—	—	141043	141043	TRUE	
69	3	Hot	10.0	50	1.00	—	—	—	—	—	140374	140374	TRUE	
70	1	Hot	30.0	50	3.00	—	—	—	—	—	452306	452306	TRUE	
71	2	Hot	30.0	50	3.00	—	—	—	—	—	449005	449005	TRUE	
72	3	Hot	30.0	50	3.00	—	—	—	—	—	449645	449645	TRUE	

Output to Curve Fitting Software		
Saturation X values	*Bound y values*	*NSB y values*
0.03	328.0	101.4
0.03	291.6	101.4
0.03	349.6	101.4
0.06	516.6	140.0
0.06	442.7	140.0
0.06	468.1	140.0
0.08	534.4	126.0
0.08	570.2	126.0
0.08	681.7	126.0
0.1	701.7	140 9
0.1	714.9	140 9
0.1	730.3	140 9
0.3	844.3	228.1
0.3	758.0	228.1
0.3	1000.1	228.1
0.6	1497.2	659 9
0.6	1417.4	659 9
0.6	1306.4	659 9
1	2388.4	1372 2
1	1752.5	1372 2
1	2937.0	1372 2
3	2469.3	2960 9
3	3191.6	2960 9
3	3266.7	2960 9

Total Binding – Positions 1-24 radiolabeled E2 plus cytosol (Panel A)

		Tube Identification			Assay tube contents								
Run	*Position*	Rep	*Tube Type Code*	*Conc. Code*	*Hot Conc. Initial* (nM)	*Hot E2* (ul)	*Cold Conc. Initial* (mM)	*Cold* (ul)	*Buffer* (ul)	*Cytosol* (ul)	*Hot Conc. Final* (nM)	*Cold Conc. Final* (nM)	*Total Volume* (ul)
030308	1	1	H	c1	0.3	50	0	0	350	100	0.03	0	500
030308	2	2	H	c1	0.3	50	0	0	350	100	0.03	0	500
030308	3	3	H	c1	0.3	50	0	0	350	100	0.03	0	500
030308	4	1	H	c2	0.6	50	0	0	350	100	0.06	0	500
030308	5	2	H	c2	0.6	50	0	0	350	100	0.06	0	500
030308	6	3	H	c2	0.6	50	0	0	350	100	0.06	0	500
030308	7	1	H	c3	0.8	50	0	0	350	100	0.08	0	500
030308	8	2	H	c3	0.8	50	0	0	350	100	0.08	0	500
030308	9	3	H	c3	0.8	50	0	0	350	100	0.08	0	500
030308	10	1	H	c4	1	50	0	0	350	100	0.1	0	500
030308	11	2	H	c4	1	50	0	0	350	100	0.1	0	500
030308	12	3	H	c4	1	50	0	0	350	100	0.1	0	500
030308	13	1	H	c5	3	50	0	0	350	100	0.3	0	500
030308	14	2	H	c5	3	50	0	0	350	100	0.3	0	500
030308	15	3	H	c5	3	50	0	0	350	100	0.3	0	500
030308	16	1	H	c6	6	50	0	0	350	100	0.6	0	500
030308	17	2	H	c6	6	50	0	0	350	100	0.6	0	500
030308	18	3	H	c6	6	50	0	0	350	100	0.6	0	500
030308	19	1	H	c7	10	50	0	0	350	100	1	0	500
030308	20	2	H	c7	10	50	0	0	350	100	1	0	500
030308	21	3	H	c7	10	50	0	0	350	100	1	0	500
030308	22	1	H	c8	30	50	0	0	350	100	3	0	500
030308	23	2	H	c8	30	50	0	0	350	100	3	0	500
030308	24	3	H	c8	30	50	0	0	350	100	3	0	500

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Total Binding -- Positions 1-24 radiolabeled E2 plus cytosol (Panel B)

		Scintillation Results							Number of molecules					Ratio
Run	Position	Counts per Scintillation Vial	Non Specific Binding (Mean of reps in pos. 25-48)	Specific Binding (Total - Non Specific)	Ratio of NSB/ total binding	Ratio Total binding/ Hot	Total Added (Mean of reps in pos. 49-72)	Free (mean total added - total bound)	Total Binding molecules	Non Specific Binding molecules	Specific Binding molecules	Total Added (Mean of reps in pos. 49-72)	Free (mean total added - total bound)	Specific Bound / Free
		(dpm)	(dpm)	(dpm)			(dpm)	(dpm)	(fmole)	(fmole)	(fmole)	(fmole)	(fmole)	
030308	1	328.0	101.4	226.6	30.9%	10.0%	3268.9	2940.9	1	0	1	11	10	0.08
030308	2	291.6	101.4	190.2	34.8%	8.9%	3268.9	2977.3	1	0	1	11	10	0.06
030308	3	349.6	101.4	248.2	29.0%	10.7%	3268.9	2919.3	1	0	1	11	10	0.09
030308	4	516.6	140.0	376.6	27.1%	7.4%	6985.7	6469.2	2	0	1	24	22	0.06
030308	5	442.7	140.0	302.7	31.6%	6.3%	6985.7	6543.1	1	0	1	24	22	0.05
030308	6	468.1	140.0	328.1	29.9%	6.7%	6985.7	6517.6	2	0	1	24	22	0.05
030308	7	534.4	126.0	408.4	23.6%	5.6%	9562.9	9028.5	2	0	1	32	30	0.05
030308	8	570.2	126.0	444.1	22.1%	6.0%	9562.9	8992.8	2	0	1	32	30	0.05
030308	9	681.7	126.0	555.7	18.5%	7.1%	9562.9	8881.2	2	0	2	32	30	0.06
030308	10	701.7	140.9	560.8	20.1%	5.6%	12604.5	11902.8	2	0	2	42	40	0.05
030308	11	714.9	140.9	574.0	19.7%	5.7%	12604.5	11889.6	2	0	2	42	40	0.05
030308	12	730.3	140.9	589.4	19.3%	5.8%	12604.5	11874.2	2	0	2	42	40	0.05
030308	13	844.3	228.1	616.2	27.0%	2.2%	38282.2	37437.9	3	1	2	129	126	0.02
030308	14	758.0	228.1	529.9	30.1%	2.0%	38282.2	37524.2	3	1	2	129	126	0.01
030308	15	1000.1	228.1	772.0	22.8%	2.6%	38282.2	37282.1	3	1	3	129	126	0.02
030308	16	1497.2	659.9	837.4	44.1%	1.8%	81870.6	80373.3	5	2	3	276	271	0.01
030308	17	1417.4	659.9	757.5	46.6%	1.7%	81870.6	80453.2	5	2	3	276	271	0.01
030308	18	1306.4	659.9	646.5	50.5%	1.6%	81870.6	80564.2	4	2	2	276	271	0.01
030308	19	2388.4	1372.2	1016.2	57.5%	1.7%	140599.7	138211.2	8	5	3	473	465	0.01
030308	20	1752.5	1372.2	380.3	78.3%	1.2%	140599.7	138847.2	6	5	1	473	468	0.00
030308	21	2937.0	1372.2	1564.8	46.7%	2.1%	140599.7	137662.6	10	5	5	473	464	0.01
030308	22	2469.3	2960.9	-491.6	119.9%	0.5%	450318.7	447849.3	8	10	-2	1516	1508	0.00
030308	23	3191.6	2960.9	230.7	92.8%	0.7%	450318.7	447127.1	11	10	1	1516	1506	0.00
030308	24	3266.7	2960.9	305.8	90.6%	0.7%	450318.7	447051.9	11	10	1	1516	1505	0.00

		Non Specific Binding -- Positions 25-48 radiolabeled E2 plus 100 X inert E2 plus cytosol											
		Tube Identification			Assay tube contents							Scintillation Results	
Run	*Position*	*Rep*	*Tube Type Code*	*Conc. Code*	*Hot Conc. Initial* (nM)	*Hot* (ul)	*Cold Conc. Initial* (mM)	*Cold* (ul)	*Buffer* (ul)	*Cytosol* (ul)	*Hot Conc. Final* (nM)	*Cold Conc. Final* (nM)	*Total Binding* (dpm)	*Non Specific Binding (Mean of reps in pos. 25-48)* (dpm)
030308	25	1	HC		0.3	50	30	50	300	100	0.03	3	80.5	101.4
030308	26	2	HC		0.3	50	30	50	300	100	0.03	3	125.4	101.4
030308	27	3	HC		0.3	50	30	50	300	100	0.03	3	98.2	101.4
030308	28	1	HC		0.6	50	60	50	300	100	0.06	6	114.0	140.0
030308	29	2	HC		0.6	50	60	50	300	100	0.06	6	152.1	140.0
030308	30	3	HC		0.6	50	60	50	300	100	0.06	6	153.9	140.0
030308	31	1	HC		0.8	50	80	50	300	100	0.08	8	143.7	126.0
030308	32	2	HC		0.8	50	80	50	300	100	0.08	8	150.4	126.0
030308	33	3	HC		0.8	50	80	50	300	100	0.08	8	84.0	126.0
030308	34	1	HC		1	50	100	50	300	100	0.1	10	178.3	140.9
030308	35	2	HC		1	50	100	50	300	100	0.1	10	131.3	140.9
030308	36	3	HC		1	50	100	50	300	100	0.1	10	113.0	140.9
030308	37	1	HC		3	50	300	50	300	100	0.3	30	280.9	228.1
030308	38	2	HC		3	50	300	50	300	100	0.3	30	216.9	228.1
030308	39	3	HC		3	50	300	50	300	100	0.3	30	186.5	228.1
030308	40	1	HC		6	50	600	50	300	100	0.6	60	746.1	659.9
030308	41	2	HC		6	50	600	50	300	100	0.6	60	662.7	659.9
030308	42	3	HC		6	50	600	50	300	100	0.6	60	570.7	659.9
030308	43	1	HC		10	50	1000	50	300	100	1	100	1433.1	1372.2
030308	44	2	HC		10	50	1000	50	300	100	1	100	1136.4	1372.2
030308	45	3	HC		10	50	1000	50	300	100	1	100	1547.1	1372.2
030308	46	1	HC		30	50	3000	50	300	100	3	300	3118.2	2960.9
030308	47	2	HC		30	50	3000	50	300	100	3	300	2583.2	2960.9
030308	48	3	HC		30	50	3000	50	300	100	3	300	3181.2	2960.9

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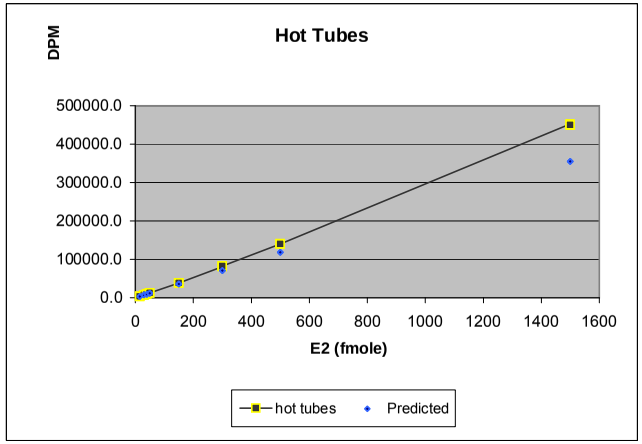
Sat-template

		Free -- Positions 49-72, radiolabeled E2 without cytosol										
Run	*Position*	*Rep*	*Tube Type Code*	*Conc. Code*	*Hot Conc. Initial*	*Hot*	*Molecules of E2*	*Counts per Scintillation Vial*	*Experimental number of molecules*	*Total Added (Mean of reps in pos. 49-72)*	*predicted dpm*
					(nM)	*(ul)*	*(fmole)*	*(dpm)*	*(fmole)*	*(dpm)*	
030308	49	1	Hot	c1	0.3	50	15	3249.6	11	3268.9	3548
030308	50	2	Hot	c1	0.3	50	15	3315.9	11	3268.9	3548
030308	51	3	Hot	c1	0.3	50	15	3241.3	11	3268.9	3548
030308	52	1	Hot	c2	0.6	50	30	6810.1	23	6985.7	7096
030308	53	2	Hot	c2	0.6	50	30	6912.3	23	6985.7	7096
030308	54	3	Hot	c2	0.6	50	30	7234.7	24	6985.7	7096
030308	55	1	Hot	c3	0.8	50	40	9508.3	32	9562.9	9461
030308	56	2	Hot	c3	0.8	50	40	9773.8	33	9562.9	9461
030308	57	3	Hot	c3	0.8	50	40	9406.6	32	9562.9	9461
030308	58	1	Hot	c4	1	50	50	12620.0	42	12604.5	11826
030308	59	2	Hot	c4	1	50	50	12627.1	43	12604.5	11826
030308	60	3	Hot	c4	1	50	50	12566.5	42	12604.5	11826
030308	61	1	Hot	c5	3	50	150	38501.3	130	38282.2	35478
030308	62	2	Hot	c5	3	50	150	38391.0	129	38282.2	35478
030308	63	3	Hot	c5	3	50	150	37954.3	128	38282.2	35478
030308	64	1	Hot	c6	6	50	300	80799.9	272	81870.6	70955
030308	65	2	Hot	c6	6	50	300	82559.9	278	81870.6	70955
030308	66	3	Hot	c6	6	50	300	82251.9	277	81870.6	70955
030308	67	1	Hot	c7	10	50	500	140382.0	473	140599.7	118259
030308	68	2	Hot	c7	10	50	500	141043.0	475	140599.7	118259
030308	69	3	Hot	c7	10	50	500	140374.0	473	140599.7	118259
030308	70	1	Hot	c8	30	50	1500	452306.0	1523	450318.7	354777
030308	71	2	Hot	c8	30	50	1500	449005.0	1512	450318.7	354777
030308	72	3	Hot	c8	30	50	1500	449645.0	1514	450318.7	354777

Linear regression results (LINEST function)			
(Regression line forced through 0,0)			
Slope	296.9573511	dpm/fmole	
1/slope	0.003367487	fmole/dpm	
	x	y	
origin	0	0	
end point	1523.1	452306	
SLOPE function, used if missing HOT tubes			
Slope	301.3	dpm/fmole	
1/slope	0.003319	fmole/dpm	
	x	y	
origin	0	0	
end point	1501.0	452306	

Computation Check	
3/3/08	specific activity date
106.54	Ci/mMole Estradiol
2.22E+12	DPM/Ci (definition)
2.3652E+14	DPM/mmole
2.3652E+11	DPM/nmole
236.5	DPM/fmole
0.004228	fmole/DPM



Prism input for bound/free		Prism input for specific bound		HOT tubes	NSB Tubes	Specific bound	Total Bound
specific bound/molar	bound/free %	average total added molar	specific bound/molar	total added dpm	NSB dpm	spcific bound/dpm	total bound dpm
1.91643E-12	0.0771	2.76E-11	1.9164E-12	3249.64	80.54	226.64	328.01
1.60871E-12	0.0639	2.76E-11	1.6087E-12	3315.85	125.39	190.25	291.62
2.09895E-12	0.0850	2.76E-11	2.0989E-12	3241.30	98.19	248.22	349.59
3.1844E-12	0.0582	5.91E-11	3.1844E-12	6810.14	114.03	376.59	516.57
2.55946E-12	0.0463	5.91E-11	2.5595E-12	6912.33	152.07	302.68	442.67
2.77471E-12	0.0503	5.91E-11	2.7747E-12	7234.69	153.86	328.14	468.12
3.45301E-12	0.0452	8.09E-11	3.4530E-12	9508.31	143.75	408.35	534.38
3.75552E-12	0.0494	8.09E-11	3.7555E-12	9773.82	150.38	444.13	570.15
4.69871E-12	0.0626	8.09E-11	4.6987E-12	9406.59	83.96	555.67	681.69
4.74251E-12	0.0471	1.07E-10	4.7425E-12	12620.00	178.34	560.85	701.75
4.854E-12	0.0483	1.07E-10	4.8540E-12	12627.10	131.34	574.03	714.93
4.98401E-12	0.0496	1.07E-10	4.9840E-12	12566.50	113.03	589.41	730.31
5.21051E-12	0.0165	3.24E-10	5.2105E-12	38501.30	280.92	616.19	844.32
4.48054E-12	0.0141	3.24E-10	4.4805E-12	38391.00	216.93	529.87	758.00
6.52799E-12	0.0207	3.24E-10	6.5280E-12	37954.30	186.54	772.00	1000.13
7.08097E-12	0.0104	6.92E-10	7.0810E-12	80799.90	746.15	837.39	1497.24
6.40555E-12	0.0094	6.92E-10	6.4056E-12	82559.90	662.70	757.52	1417.37
5.46693E-12	0.0080	6.92E-10	5.4669E-12	82251.90	570.71	646.52	1306.37
8.59308E-12	0.0074	1.19E-09	8.5931E-12	140382.00	1433.10	1016.21	2388.42
3.21569E-12	0.0027	1.19E-09	3.2157E-12	141043.00	1136.45	380.29	1752.50
1.32323E-11	0.0114	1.19E-09	1.3232E-11	140374.00	1547.09	1564.84	2937.05
-4.15659E-12	-0.0011	3.81E-09	-4.1566E-12	452306.00	3118.25	-491.56	2469.33
1.95076E-12	0.0005	3.81E-09	1.9508E-12	449005.00	2583.18	230.70	3191.58
2.58623E-12	0.0007	3.81E-09	2.5862E-12	449645.00	3181.23	305.85	3266.73

(total volume in tube uL/1000)	mole to molar conversion value	Free (total added - bound)/ dpm	Free (total added - bound)/ molar	*spcific bound/dpm*	*mean specific bound/dpm*	*mean specific bound/molar*	*sp/free %*	use for bound/free: *specific bound/molar*	use for bound/free: *bound/free %*
0.5	0.0005	2940.9	2.48685E-11	226.6	221.7	1.8747E-12	7.71%	1.91643E-12	7.71%
		2977.3	2.51762E-11	190.2		0	6.39%	1.60871E-12	6.39%
		2919.3	2.46860E-11	248.2		0	8.50%	2.09895E-12	8.50%
		6469.2	5.47032E-11	376.6	335.8	2.83953E-12	5.82%	3.1844E-12	5.82%
		6543.1	5.53281E-11	302.7		0	4.63%	2.55946E-12	4.63%
		6517.6	5.51129E-11	328.1		0	5.03%	2.77471E-12	5.03%
		9028.5	7.63453E-11	408.4	469.4	3.96908E-12	4.52%	3.45301E-12	4.52%
		8992.8	7.60428E-11	444.1		0	4.94%	3.75552E-12	4.94%
		8881.2	7.50996E-11	555.7		0	6.26%	4.69871E-12	6.26%
		11902.8	1.00650E-10	560.8	574.8	4.86017E-12	4.71%	4.74251E-12	4.71%
		11889.6	1.00539E-10	574.0		0	4.83%	4.854E-12	4.83%
		11874.2	1.00409E-10	589.4		0	4.96%	4.98401E-12	4.96%
		37437.9	3.16575E-10	616.2	639.4	5.40635E-12	1.65%	5.21051E-12	1.65%
		37524.2	3.17305E-10	529.9		0	1.41%	4.48054E-12	1.41%
		37282.1	3.15257E-10	772.0		0	2.07%	6.52799E-12	2.07%
		80373.3	6.79637E-10	837.4	747.1	6.31782E-12	1.04%	7.08097E-12	1.04%
		80453.2	6.80313E-10	757.5		0	0.94%	6.40555E-12	0.94%
		80564.2	6.81251E-10	646.5		0	0.80%	5.46693E-12	0.80%
		138211.2	1.16872E-09	1016.2	987.1	8.34701E-12	0.74%	8.59308E-12	0.74%
		138847.2	1.17409E-09	380.3		0	0.27%	3.21569E-12	0.27%
		137662.6	1.16408E-09	1564.8		0	1.14%	1.32323E-11	1.14%
		447849.3	3.78702E-09	-491.6	15.0	1.26798E-13	-0.11%	-4.15659E-12	-0.11%
		447127.1	3.78091E-09	230.7		0	0.05%	1.95076E-12	0.05%
		447051.9	3.78027E-09	305.8		0	0.07%	2.58623E-12	0.07%

Molecules of E2 (fmole)	total added dpm	total added molar	mean totoal added dpm	use for specific bound: average total added molar	use for specific bound: specific bound/molar
15	3249.64	2.7479E-11	3268.93	2.76421E-11	1.91643E-12
15	3315.85	2.80388E-11		2.76421E-11	1.60871E-12
15	3241.30	2.74084E-11		2.76421E-11	2.09895E-12
30	6810.14	5.75866E-11	6985.72	5.90713E-11	3.1844E-12
30	6912.33	5.84507E-11		5.90713E-11	2.55946E-12
30	7234.69	6.11766E-11		5.90713E-11	2.77471E-12
40	9508.31	8.04023E-11	9562.91	8.0864E-11	3.45301E-12
40	9773.82	8.26475E-11		8.0864E-11	3.75552E-12
40	9406.59	7.95422E-11		8.0864E-11	4.69871E-12
50	12620.00	1.06715E-10	12604.53	1.06584E-10	4.74251E-12
50	12627.10	1.06775E-10		1.06584E-10	4.854E-12
50	12566.50	1.06262E-10		1.06584E-10	4.98401E-12
150	38501.30	3.25567E-10	38282.20	3.23714E-10	5.21051E-12
150	38391.00	3.24634E-10		3.23714E-10	4.48054E-12
150	37954.30	3.20942E-10		3.23714E-10	6.52799E-12
300	80799.90	6.83244E-10	81870.57	6.92298E-10	7.08097E-12
300	82559.90	6.98127E-10		6.92298E-10	6.40555E-12
300	82251.90	6.95522E-10		6.92298E-10	5.46693E-12
500	140382.00	1.18707E-09	140599.67	1.18891E-09	8.59308E-12
500	141043.00	1.19266E-09		1.18891E-09	3.21569E-12
500	140374.00	1.187E-09		1.18891E-09	1.32323E-11
1500	452306.00	3.8247E-09	450318.67	3.8079E-09	-4.15659E-12
1500	449005.00	3.79679E-09		3.8079E-09	1.95076E-12
1500	449645.00	3.8022E-09		3.8079E-09	2.58623E-12

total bound dpm	*total bound/molar*	*average Bound/dpm*	*average bound/molar*	*NSB dpm*	NSB molar	Hot Final Concentration (nM)
328.0	2.77361E-12	323.07	2.73188E-12	80.5	6.81004E-13	0.03
291.6	2.4659E-12		0	125.4	1.06026E-12	0.03
349.6	2.95613E-12		0	98.2	8.30295E-13	0.03
516.6	4.36812E-12	475.79	4.02324E-12	114.0	9.64238E-13	0.06
442.7	3.74318E-12		0	152.1	1.2859E-12	0.06
468.1	3.95843E-12		0	153.9	1.301E-12	0.06
534.4	4.51868E-12	595.41	5.03475E-12	143.7	1.21551E-12	0.08
570.2	4.82119E-12		0	150.4	1.27157E-12	0.08
681.7	5.76437E-12		0	84.0	7.09924E-13	0.08
701.7	5.93396E-12	715.66	6.05162E-12	178.3	1.508E-12	0.10
714.9	6.04545E-12		0	131.3	1.11061E-12	0.10
730.3	6.17546E-12		0	113.0	9.5574E-13	0.10
844.3	7.13957E-12	867.48	7.33542E-12	280.9	2.37546E-12	0.30
758.0	6.40961E-12		0	216.9	1.83436E-12	0.30
1000.1	8.45706E-12		0	186.5	1.57738E-12	0.30
1497.2	1.26607E-11	1406.99	1.18975E-11	746.1	6.30941E-12	0.60
1417.4	1.19852E-11		0	662.7	5.60379E-12	0.60
1306.4	1.10466E-11		0	570.7	4.82588E-12	0.60
2388.4	2.01965E-11	2359.32	1.99504E-11	1433.1	1.21183E-11	1.00
1752.5	1.48191E-11		0	1136.4	9.60978E-12	1.00
2937.0	2.48357E-11		0	1547.1	1.30822E-11	1.00
2469.3	2.08807E-11	2975.88	2.51641E-11	3118.2	2.63679E-11	3.00
3191.6	2.6988E-11		0	2583.2	2.18434E-11	3.00
3266.7	2.76235E-11		0	3181.2	2.69005E-11	3.00

	"[Prism] run title and date"				
One site binding (hyperbola)		Bmax molar	5.49E-12	KD molar	4.20E-11
Best-fit values		mole to molar conversion value	0.0005	molar to nM converison	1.00E+09
BMAX	5.49E-12	DPM/mole = (DPM/mmole)*1000	2.37E+17	**kd nM =**	4.20E-02
KD	4.20E-11	Bmax molar to Bmax moles	2.747E-15		
Std. Error		= DPM/((DPM/mmole)*1000)	2.747E-15		
BMAX		=Bmax DPM	6.50E+02		
KD					
95% Confidence Intervals					
BMAX		assay date	3/3/2008		
KD		Bmax(dpm)	649.715783		
Goodness of Fit		DPM/Ci (definition)	2.22E+12		
Degrees of Freedom		Ci/mmole	106.54		
R^2 (unweighted)		DPM/mmole	2.37E+14		
Weighted Sum of Squares ($1/Y^2$)		DPM/pmole	2.37E+05		
Absolute Sum of Squares		1/(DPM/mmole)	4 23E-15		
Sy x		1/(DPM/pmole)	4 23E-06		
Data		SA(dpm/pmole)	2.37E+05		
Number of X values		protein/tube (ug)	25		
Number of Y replicates		protein /tube(mg)	0.025		
Total number of values		bmax pmole	0.002747		
Number of missing values		bmax pmole/mg	0.10988		
		Bmax fmole/mg	109.88		
		Bmax (fmole/100 ug)	10.988		
		Bmax(fmole/100 ug)/Bmax molar	2.00E+12		

Laboratory Code Hamner

ER Saturation Assay
72 assay tubes

Provide information in all blue cells in columns N and DM

If the DPM value for a tube was judged unreliable,
include the DPM value in column N, and
provide a reason in column Q;
the "TRUE" in column P will automatically change to "FALSE".

For your convenience, data reduction is performed in columns
V through BY, and the values needed for analysis are presented
in columns S, T and U; Prism-ready data in CF - CM.

Cells in column R are presented w th a grey background
if the total binding exceeds 10% of the hot added at that concentration,
the cytosol concentration is probably too high for good competitive assays

Laboratory Code:	Hamner	
Run identification:	030308	
Assay start date:	3/3/2008	
Tracer lot number:	3589221	
Specific activity on day of assay:	106.54	**Ci/mmole**
Cytosol lot or vial number:	PREP-3	
protein (cytosol) per tube:	50	**ug**
protein (cytosol) per tube:	0.05	**mg**
KD	3.08E-01	**nM**
Bmax	28.51	**fmole/100 ug**
volume of ethanol counted:	1	**mL**
multiply DPM in sample by :	1.5	
total volume in tubes	500	**uL**

Saturation Assay Tube Layout

Position	Replicate	Tube Type Code	Hot E2 Initial Concentration (nM)	Hot E2 Volume (uL)	Hot E2 Final Concentration (nM)	Cold E2 Initial Concentration (nM)	Cold E2 Volume (uL)	Cold E2 Final Concentration (nM)	Buffer Volume (uL)	Receptor Volume (uL)
1	1	H	0.3	50	0.03	—	—	—	350	100
2	2	H	0.3	50	0.03	—	—	—	350	100
3	3	H	0.3	50	0.03	—	—	—	350	100
4	1	H	0.6	50	0.06	—	—	—	350	100
5	2	H	0.6	50	0.06	—	—	—	350	100
6	3	H	0.6	50	0.06	—	—	—	350	100
7	1	H	0.8	50	0.08	—	—	—	350	100
8	2	H	0.8	50	0.08	—	—	—	350	100
9	3	H	0.8	50	0.08	—	—	—	350	100
10	1	H	1.0	50	0.10	—	—	—	350	100
11	2	H	1.0	50	0.10	—	—	—	350	100
12	3	H	1.0	50	0.10	—	—	—	350	100
13	1	H	3.0	50	0.30	—	—	—	350	100
14	2	H	3.0	50	0.30	—	—	—	350	100
15	3	H	3.0	50	0.30	—	—	—	350	100
16	1	H	6.0	50	0.60	—	—	—	350	100
17	2	H	6.0	50	0.60	—	—	—	350	100
18	3	H	6.0	50	0.60	—	—	—	350	100
19	1	H	10.0	50	1.00	—	—	—	350	100
20	2	H	10.0	50	1.00	—	—	—	350	100
21	3	H	10.0	50	1.00	—	—	—	350	100
22	1	H	30.0	50	3.00	—	—	—	350	100
23	2	H	30.0	50	3.00	—	—	—	350	100
24	3	H	30.0	50	3.00	—	—	—	350	100
25	1	HC	0.3	50	0.03	30	50	3	300	100
26	2	HC	0.3	50	0.03	30	50	3	300	100
27	3	HC	0.3	50	0.03	30	50	3	300	100
28	1	HC	0.6	50	0.06	60	50	6	300	100
29	2	HC	0.6	50	0.06	60	50	6	300	100
30	3	HC	0.6	50	0.06	60	50	6	300	100
31	1	HC	0.8	50	0.08	80	50	8	300	100
32	2	HC	0.8	50	0.08	80	50	8	300	100
33	3	HC	0.8	50	0.08	80	50	8	300	100
34	1	HC	1.0	50	0.10	100	50	10	300	100
35	2	HC	1.0	50	0.10	100	50	10	300	100
36	3	HC	1.0	50	0.10	100	50	10	300	100
37	1	HC	3.0	50	0.30	300	50	30	300	100
38	2	HC	3.0	50	0.30	300	50	30	300	100
39	3	HC	3.0	50	0.30	300	50	30	300	100
40	1	HC	6.0	50	0.60	600	50	60	300	100
41	2	HC	6.0	50	0.60	600	50	60	300	100
42	3	HC	6.0	50	0.60	600	50	60	300	100
43	1	HC	10.0	50	1.00	1000	50	100	300	100
44	2	HC	10.0	50	1.00	1000	50	100	300	100
45	3	HC	10.0	50	1.00	1000	50	100	300	100
46	1	HC	30.0	50	3.00	3000	50	300	300	100
47	2	HC	30.0	50	3.00	3000	50	300	300	100
48	3	HC	30.0	50	3.00	3000	50	300	300	100
49	1	Hot	0.3	50	0.03	—	—	—	—	—
50	2	Hot	0.3	50	0.03	—	—	—	—	—
51	3	Hot	0.3	50	0.03	—	—	—	—	—
52	1	Hot	0.6	50	0.06	—	—	—	—	—
53	2	Hot	0.6	50	0.06	—	—	—	—	—
54	3	Hot	0.6	50	0.06	—	—	—	—	—
55	1	Hot	0.8	50	0.08	—	—	—	—	—
56	2	Hot	0.8	50	0.08	—	—	—	—	—
57	3	Hot	0.8	50	0.08	—	—	—	—	—
58	1	Hot	1.0	50	0.10	—	—	—	—	—
59	2	Hot	1.0	50	0.10	—	—	—	—	—
60	3	Hot	1.0	50	0.10	—	—	—	—	—
61	1	Hot	3.0	50	0.30	—	—	—	—	—
62	2	Hot	3.0	50	0.30	—	—	—	—	—
63	3	Hot	3.0	50	0.30	—	—	—	—	—
64	1	Hot	6.0	50	0.60	—	—	—	—	—
65	2	Hot	6.0	50	0.60	—	—	—	—	—
66	3	Hot	6.0	50	0.60	—	—	—	—	—
67	1	Hot	10.0	50	1.00	—	—	—	—	—
68	2	Hot	10.0	50	1.00	—	—	—	—	—
69	3	Hot	10.0	50	1.00	—	—	—	—	—
70	1	Hot	30.0	50	3.00	—	—	—	—	—
71	2	Hot	30.0	50	3.00	—	—	—	—	—
72	3	Hot	30.0	50	3.00	—	—	—	—	—

raw dpm	dpm for 1.5 mL	Use this value?	Notes to explain why "Use this value" is set to "FALSE"	Ten Percent Rule
459	688 5	TRUE		21.1%
510.73	766.095	TRUE		23.4%
446.85	670.275	TRUE		20.5%
810.56	1215.84	TRUE		17.4%
654 13	981 195	TRUE		14.0%
855 22	1282 83	TRUE		18.4%
896.91	1345.365	TRUE		14.1%
879 4	1319 1	TRUE		13.8%
961.48	1442.22	TRUE		15.1%
979 97	1469 955	TRUE		11.7%
897 26	1345 89	TRUE		10.7%
995.33	1492.995	TRUE		11.8%
1148 33	1722 495	TRUE		4.5%
1396.89	2095.335	TRUE		5.5%
1461 4	2192 1	TRUE		5.7%
1787 14	2680 71	TRUE		3.3%
2054.51	3081.765	TRUE		3.8%
2004 44	3006 66	TRUE		3.7%
1866.03	2799.045	TRUE		2.0%
2451 78	3677 67	TRUE		2.6%
2263 78	3395 67	TRUE		2.4%
3938.87	5908.305	TRUE		1.3%
3746.59	5619.885	TRUE		1.2%
4325 5	6488.25	TRUE		1.4%
44.92	67.38	TRUE		
76 78	115 17	TRUE		
59.85	89.775	TRUE		
119 07	178 605	TRUE		
72	108	TRUE		
65.07	97.605	TRUE		
84 13	126 195	TRUE		
99.29	148.935	TRUE		
129 7	194 55	TRUE		
97	145 5	TRUE		
97.15	145.725	TRUE		
90 85	136 275	TRUE		
179.76	269.64	TRUE		
176 15	264 225	TRUE		
252 03	378 045	TRUE		
594.62	891.93	TRUE		
324 73	487 095	TRUE		
706.75	1060.125	TRUE		
1277 88	1916 82	TRUE		
1068 97	1603 455	TRUE		
518.9	778.35	TRUE		
2324 6	3486 9	TRUE		
2490.04	3735.06	TRUE		
3343 95	5015 925	TRUE		
3249 64	3249 64	TRUE		
3315.85	3315.85	TRUE		
3241 3	3241 3	TRUE		
6810.14	6810.14	TRUE		
6912 33	6912 33	TRUE		
7234 69	7234 69	TRUE		
9508.31	9508.31	TRUE		
9773 82	9773 82	TRUE		
9406.59	9406.59	TRUE		
12620	12620	TRUE		
12627 1	12627 1	TRUE		
12566 5	12566 5	TRUE		
38501.3	38501.3	TRUE		
38391	38391	TRUE		
37954.3	37954.3	TRUE		
80799 9	80799 9	TRUE		
82559 9	82559 9	TRUE		
82251.9	82251.9	TRUE		
140382	140382	TRUE		
141043	141043	TRUE		
140374	140374	TRUE		
452306	452306	TRUE		
449005	449005	TRUE		
449645	449645	TRUE		

Output to Curve Fitting Software		
Saturation X values	*Bound y values*	*NSB y values*
0.03	688.5	90.8
0.03	766.1	90.8
0.03	670.3	90.8
0.06	1215.8	128.1
0.06	981.2	128.1
0.06	1282.8	128.1
0.08	1345.4	156.6
0.08	1319.1	156.6
0.08	1442.2	156.6
0.1	1470.0	142.5
0.1	1345.9	142.5
0.1	1493.0	142.5
0.3	1722.5	304.0
0.3	2095.3	304.0
0.3	2192.1	304.0
0.6	2680.7	813.1
0.6	3081.8	813.1
0.6	3006.7	813.1
1	2799.0	1432.9
1	3677.7	1432.9
1	3395.7	1432.9
3	5908.3	4079.3
3	5619.9	4079.3
3	6488.3	4079.3

Total Binding -- Positions 1-24 radiolabeled E2 plus cytosol (Panel A)													
		Tube Identification			Assay tube contents								
Run	Position	Rep	Tube Type Code	Conc. Code	Hot Conc. Initial	Hot E2	Cold Conc. Initial	Cold	Buffer	Cytosol	Hot Conc. Final	Cold Conc. Final	Total Volume
					(nM)	(ul)	(mM)	(ul)	(ul)	(ul)	(nM)	(nM)	(ul)
030308	1	1	H	c1	0.3	50	0	0	350	100	0.03	0	500
030308	2	2	H	c1	0.3	50	0	0	350	100	0.03	0	500
030308	3	3	H	c1	0.3	50	0	0	350	100	0.03	0	500
030308	4	1	H	c2	0.6	50	0	0	350	100	0.06	0	500
030308	5	2	H	c2	0.6	50	0	0	350	100	0.06	0	500
030308	6	3	H	c2	0.6	50	0	0	350	100	0.06	0	500
030308	7	1	H	c3	0.8	50	0	0	350	100	0.08	0	500
030308	8	2	H	c3	0.8	50	0	0	350	100	0.08	0	500
030308	9	3	H	c3	0.8	50	0	0	350	100	0.08	0	500
030308	10	1	H	c4	1	50	0	0	350	100	0.1	0	500
030308	11	2	H	c4	1	50	0	0	350	100	0.1	0	500
030308	12	3	H	c4	1	50	0	0	350	100	0.1	0	500
030308	13	1	H	c5	3	50	0	0	350	100	0.3	0	500
030308	14	2	H	c5	3	50	0	0	350	100	0.3	0	500
030308	15	3	H	c5	3	50	0	0	350	100	0.3	0	500
030308	16	1	H	c6	6	50	0	0	350	100	0.6	0	500
030308	17	2	H	c6	6	50	0	0	350	100	0.6	0	500
030308	18	3	H	c6	6	50	0	0	350	100	0.6	0	500
030308	19	1	H	c7	10	50	0	0	350	100	1	0	500
030308	20	2	H	c7	10	50	0	0	350	100	1	0	500
030308	21	3	H	c7	10	50	0	0	350	100	1	0	500
030308	22	1	H	c8	30	50	0	0	350	100	3	0	500
030308	23	2	H	c8	30	50	0	0	350	100	3	0	500
030308	24	3	H	c8	30	50	0	0	350	100	3	0	500

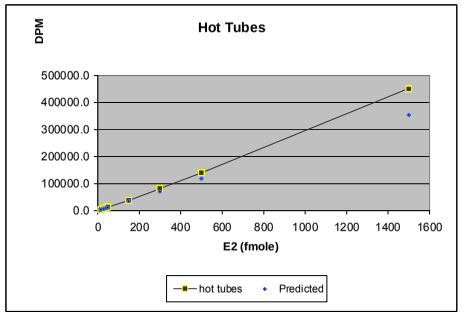
		Total Binding -- Positions 1-24 radiolabeled E2 plus cytosol (Panel B)												
		Scintillation Results							Number of molecules					Ratio
Run	Position	Counts per Scintillation Vial (dpm)	Non Specific Binding (Mean of reps in pos. 25-48) (dpm)	Specific Binding (Total - Non Specific) (dpm)	Ratio of NSB/ total binding	Ratio Total binding/ Hot	Total Added (Mean of reps in pos. 49-72) (dpm)	Free (mean total added - total bound) (dpm)	Total Binding molecules (fmole)	Non Specific Binding molecules (fmole)	Specific Binding molecules (fmole)	Total Added (Mean of reps in pos. 49-72) (fmole)	Free (mean total added - total bound) (fmole)	Specific Bound / Free
030308	1	688.5	90.8	597.7	13.2%	21.1%	3268.9	2580.4	2	0	2	11	9	0.23
030308	2	766.1	90.8	675.3	11.8%	23.4%	3268.9	2502.8	3	0	2	11	8	0.27
030308	3	670.3	90.8	579.5	13.5%	20.5%	3268.9	2598.7	2	0	2	11	9	0.22
030308	4	1215.8	128.1	1087.8	10.5%	17.4%	6985.7	5769.9	4	0	4	24	19	0.19
030308	5	981.2	128.1	853.1	13.1%	14.0%	6985.7	6004.5	3	0	3	24	20	0.14
030308	6	1282.8	128.1	1154.8	10.0%	18.4%	6985.7	5702.9	4	0	4	24	19	0.20
030308	7	1345.4	156.6	1188.8	11.6%	14.1%	9562.9	8217.5	5	1	4	32	28	0.14
030308	8	1319.1	156.6	1162.5	11.9%	13.8%	9562.9	8243.8	4	1	4	32	28	0.14
030308	9	1442.2	156.6	1285.7	10.9%	15.1%	9562.9	8120.7	5	1	4	32	27	0.16
030308	10	1470.0	142.5	1327.5	9.7%	11.7%	12604.5	11134.6	5	0	4	42	37	0.12
030308	11	1345.9	142.5	1203.4	10.6%	10.7%	12604.5	11258.6	5	0	4	42	38	0.11
030308	12	1493.0	142.5	1350.5	9.5%	11.8%	12604.5	11111.5	5	0	5	42	37	0.12
030308	13	1722.5	304.0	1418.5	17.6%	4.5%	38282.2	36559.7	6	1	5	129	123	0.04
030308	14	2095.3	304.0	1791.4	14.5%	5.5%	38282.2	36186.9	7	1	6	129	122	0.05
030308	15	2192.1	304.0	1888.1	13.9%	5.7%	38282.2	36090.1	7	1	6	129	122	0.05
030308	16	2680.7	813.1	1867.7	30.3%	3.3%	81870.6	79189.9	9	3	6	276	267	0.02
030308	17	3081.8	813.1	2268.7	26.4%	3.8%	81870.6	78788.8	10	3	8	276	265	0.03
030308	18	3006.7	813.1	2193.6	27.0%	3.7%	81870.6	78863.9	10	3	7	276	266	0.03
030308	19	2799.0	1432.9	1366.2	51.2%	2.0%	140599.7	137800.6	9	5	5	473	464	0.01
030308	20	3677.7	1432.9	2244.8	39.0%	2.6%	140599.7	136922.0	12	5	8	473	461	0.02
030308	21	3395.7	1432.9	1962.8	42.2%	2.4%	140599.7	137204.0	11	5	7	473	462	0.01
030308	22	5908.3	4079.3	1829.0	69.0%	1.3%	450318.7	444410.4	20	14	6	1516	1497	0.00
030308	23	5619.9	4079.3	1540.6	72.6%	1.2%	450318.7	444698.8	19	14	5	1516	1498	0.00
030308	24	6488.3	4079.3	2409.0	62.9%	1.4%	450318.7	443830.4	22	14	8	1516	1495	0.01

		Non Specific Binding -- Positions 25-48 radiolabeled E2 plus 100 X inert E2 plus cytosol											
		Tube Identification			Assay tube contents							Scintillation Results	
Run	*Position*	*Rep*	*Tube Type Code*	*Conc. Code*	*Hot Conc. Initial*	*Hot*	*Cold Conc. Initial*	*Cold*	*Buffer*	*Cytosol*	*Hot Conc. Final*	*Cold Conc. Final*	*Total Binding*	*Non Specific Binding (Mean of reps in pos. 25-48)*
					(nM)	*(ul)*	*(mM)*	*(ul)*	*(ul)*	*(ul)*	*(nM)*	*(nM)*	*(dpm)*	*(dpm)*
030308	25	1	HC		0.3	50	30	50	300	100	0.03	3	67.4	90.8
030308	26	2	HC		0.3	50	30	50	300	100	0.03	3	115.2	90.8
030308	27	3	HC		0.3	50	30	50	300	100	0.03	3	89.8	90.8
030308	28	1	HC		0.6	50	60	50	300	100	0.06	6	178.6	128.1
030308	29	2	HC		0.6	50	60	50	300	100	0.06	6	108.0	128.1
030308	30	3	HC		0.6	50	60	50	300	100	0.06	6	97.6	128.1
030308	31	1	HC		0.8	50	80	50	300	100	0.08	8	126.2	156.6
030308	32	2	HC		0.8	50	80	50	300	100	0.08	8	148.9	156.6
030308	33	3	HC		0.8	50	80	50	300	100	0.08	8	194.6	156.6
030308	34	1	HC		1	50	100	50	300	100	0.1	10	145.5	142.5
030308	35	2	HC		1	50	100	50	300	100	0.1	10	145.7	142.5
030308	36	3	HC		1	50	100	50	300	100	0.1	10	136.3	142.5
030308	37	1	HC		3	50	300	50	300	100	0.3	30	269.6	304.0
030308	38	2	HC		3	50	300	50	300	100	0.3	30	264.2	304.0
030308	39	3	HC		3	50	300	50	300	100	0.3	30	378.0	304.0
030308	40	1	HC		6	50	600	50	300	100	0.6	60	891.9	813.1
030308	41	2	HC		6	50	600	50	300	100	0.6	60	487.1	813.1
030308	42	3	HC		6	50	600	50	300	100	0.6	60	1060.1	813.1
030308	43	1	HC		10	50	1000	50	300	100	1	100	1916.8	1432.9
030308	44	2	HC		10	50	1000	50	300	100	1	100	1603.5	1432.9
030308	45	3	HC		10	50	1000	50	300	100	1	100	778.4	1432.9
030308	46	1	HC		30	50	3000	50	300	100	3	300	3486.9	4079.3
030308	47	2	HC		30	50	3000	50	300	100	3	300	3735.1	4079.3
030308	48	3	HC		30	50	3000	50	300	100	3	300	5015.9	4079.3

		Free Positions 49 72, radiolabeled E2 without cytosol									
Run	*Position*	*Rep*	*Tube Type Code*	*Conc. Code*	*Hot Conc. Initial*	*Hot*	*Molecules of E2*	*Counts per Scintillation Vial*	*Experimental number of molecules*	*Total Added (Mean of reps in pos. 49-72)*	*predicted dpm*
					(nM)	*(ul)*	*(fmole)*	*(dpm)*	*(fmole)*	*(dpm)*	
030308	49	1	Hot	c1	0.3	50	15	3249.6	11	3268.9	3548
030308	50	2	Hot	c1	0.3	50	15	3315.9	11	3268.9	3548
030308	51	3	Hot	c1	0.3	50	15	3241.3	11	3268.9	3548
030308	52	1	Hot	c2	0.6	50	30	6810.1	23	6985.7	7096
030308	53	2	Hot	c2	0.6	50	30	6912.3	23	6985.7	7096
030308	54	3	Hot	c2	0.6	50	30	7234.7	24	6985.7	7096
030308	55	1	Hot	c3	0.8	50	40	9508.3	32	9562.9	9461
030308	56	2	Hot	c3	0.8	50	40	9773.8	33	9562.9	9461
030308	57	3	Hot	c3	0.8	50	40	9406.6	32	9562.9	9461
030308	58	1	Hot	c4	1	50	50	12620.0	42	12604.5	11826
030308	59	2	Hot	c4	1	50	50	12627.1	43	12604.5	11826
030308	60	3	Hot	c4	1	50	50	12566.5	42	12604.5	11826
030308	61	1	Hot	c5	3	50	150	38501.3	130	38282.2	35478
030308	62	2	Hot	c5	3	50	150	38391.0	129	38282.2	35478
030308	63	3	Hot	c5	3	50	150	37954.3	128	38282.2	35478
030308	64	1	Hot	c6	6	50	300	80799.9	272	81870.6	70955
030308	65	2	Hot	c6	6	50	300	82559.9	278	81870.6	70955
030308	66	3	Hot	c6	6	50	300	82251.9	277	81870.6	70955
030308	67	1	Hot	c7	10	50	500	140382.0	473	140599.7	118259
030308	68	2	Hot	c7	10	50	500	141043.0	475	140599.7	118259
030308	69	3	Hot	c7	10	50	500	140374.0	473	140599.7	118259
030308	70	1	Hot	c8	30	50	1500	452306.0	1523	450318.7	354777
030308	71	2	Hot	c8	30	50	1500	449005.0	1512	450318.7	354777
030308	72	3	Hot	c8	30	50	1500	449645.0	1514	450318.7	354777

Linear regression results (LINEST function)			
(Regression l ne forced through 0 0)			
Slope	296.9573511	dpm/fmole	
1/slope	0 003367487	fmole/dpm	
	x	y	
origin	0	0	
end point	1523 1	452306	
SLOPE function, used if missing HOT tubes			
Slope	301.3	dpm/fmole	
1/slope	0.003319	fmole/dpm	
	x	y	
origin	0	0	
end point	1501.0	452306	

Computation Check	
3/3/08	specific activity date
106.54	Ci/mMole Estradiol
2.22E+12	DPM/Ci (definition)
2.3652E+14	DPM/mmole
2.3652E+11	DPM/nmole
236.5	DPM/fmole
0.004228	fmole/DPM



Prism input for bound/free		Prism input for specific bound		HOT tubes	NSB Tubes	Specific bound	Total Bound
specific bound/molar	bound/free %	average total added molar	specific bound/molar	total added dpm	NSB dpm	spcific bound/dpm	total bound dpm
5.05437E-12	0.2316	2.76E-11	5.0544E-12	3249.64	67.38	597.73	688.50
5.71051E-12	0.2698	2.76E-11	5.7105E-12	3315.85	115.17	675.32	766.10
4.90025E-12	0.2230	2.76E-11	4.9003E-12	3241.30	89.78	579.50	670.28
9.19819E-12	0.1885	5.91E-11	9.1982E-12	6810.14	178.61	1087.77	1215.84
7.21403E-12	0.1421	5.91E-11	7.2140E-12	6912.33	108.00	853.13	981.20
9.76466E-12	0.2025	5.91E-11	9.7647E-12	7234.69	97.61	1154.76	1282.83
1.00525E-11	0.1447	8.09E-11	1.0053E-11	9508.31	126.20	1188.81	1345.37
9.83044E-12	0.1410	8.09E-11	9.8304E-12	9773.82	148.94	1162.54	1319.10
1.08715E-11	0.1583	8.09E-11	1.0872E-11	9406.59	194.55	1285.66	1442.22
1.1225E-11	0.1192	1.07E-10	1.1225E-11	12620.00	145.50	1327.46	1469.96
1.01759E-11	0.1069	1.07E-10	1.0176E-11	12627.10	145.73	1203.39	1345.89
1.14198E-11	0.1215	1.07E-10	1.1420E-11	12566.50	136.28	1350.50	1493.00
1.19951E-11	0.0388	3.24E-10	1.1995E-11	38501.30	269.64	1418.53	1722.50
1.51478E-11	0.0495	3.24E-10	1.5148E-11	38391.00	264.23	1791.37	2095.34
1.5966E-11	0.0523	3.24E-10	1.5966E-11	37954.30	378.05	1888.13	2192.10
1.57929E-11	0.0236	6.92E-10	1.5793E-11	80799.90	891.93	1867.66	2680.71
1.91843E-11	0.0288	6.92E-10	1.9184E-11	82559.90	487.10	2268.72	3081.77
1.85492E-11	0.0278	6.92E-10	1.8549E-11	82251.90	1060.13	2193.61	3006.66
1.15523E-11	0.0099	1.19E-09	1.1552E-11	140382.00	1916.82	1366.17	2799.05
1.8982E-11	0.0164	1.19E-09	1.8982E-11	141043.00	1603.46	2244.80	3677.67
1.65974E-11	0.0143	1.19E-09	1.6597E-11	140374.00	778.35	1962.80	3395.67
1.54661E-11	0.0041	3.81E-09	1.5466E-11	452306.00	3486.90	1829.01	5908.31
1.30272E-11	0.0035	3.81E-09	1.3027E-11	449005.00	3735.06	1540.59	5619.89
2.03701E-11	0.0054	3.81E-09	2.0370E-11	449645.00	5015.93	2408.96	6488.25

(total volume in tube uL/1000)	mole to molar conversion value	Free (total added bound)/ dpm	Free (total added bound)/ molar	*spcific bound/dpm*	*mean specific bound/dpm*	*mean specific bound molar*	*sp/free %*	use for bound/free: *specific bound/molar*	use for bound/free: *bound/free %*
0.5	0.0005	2580.4	2.18201E-11	597.7	617.5	5.22171E-12	23.16%	5.05437E-12	23.16%
		2502.8	2.11640E-11	675.3		0	26.98%	5.71051E-12	26.98%
		2598.7	2.19742E-11	579.5		0	22.30%	4.90025E-12	22.30%
		5769.9	4.87901E-11	1087.8	1031.9	8.72562E-12	18.85%	9.19819E-12	18.85%
		6004.5	5.07743E-11	853.1		0	14.21%	7.21403E-12	14.21%
		5702.9	4.82237E-11	1154.8		0	20.25%	9.76466E-12	20.25%
		8217.5	6.94876E-11	1188.8	1212.3	1.02515E-11	14.47%	1.00525E-11	14.47%
		8243.8	6.97097E-11	1162.5		0	14.10%	9.83044E-12	14.10%
		8120.7	6.86686E-11	1285.7		0	15.83%	1.08715E-11	15.83%
		11134.6	9.41541E-11	1327.5	1293.8	1.09402E-11	11.92%	1.1225E-11	11.92%
		11258.6	9.52031E-11	1203.4		0	10.69%	1.01759E-11	10.69%
		11111.5	9.39592E-11	1350.5		0	12.15%	1.14198E-11	12.15%
		36559.7	3.09149E-10	1418.5	1699.3	1.43696E-11	3.88%	1.19951E-11	3.88%
		36186.9	3.05996E-10	1791.4		0	4.95%	1.51478E-11	4.95%
		36090.1	3.05178E-10	1888.1		0	5.23%	1.5966E-11	5.23%
		79189.9	6.69630E-10	1867.7	2110.0	1.78421E-11	2.36%	1.57929E-11	2.36%
		78788.8	6.66239E-10	2268.7		0	2.88%	1.91843E-11	2.88%
		78863.9	6.66874E-10	2193.6		0	2.78%	1.85492E-11	2.78%
		137800.6	1.16524E-09	1366.2	1857.9	1.57106E-11	0.99%	1.15523E-11	0.99%
		136922.0	1.15781E-09	2244.8		0	1.64%	1.8982E-11	1.64%
		137204.0	1.16020E-09	1962.8		0	1.43%	1.65974E-11	1.43%
		444410.4	3.75794E-09	1829.0	1926.2	1.62878E-11	0.41%	1.54661E-11	0.41%
		444698.8	3.76038E-09	1540.6		0	0.35%	1.30272E-11	0.35%
		443830.4	3.75303E-09	2409.0		0	0.54%	2.03701E-11	0.54%

Molecules of E2 (fmole)	total added dpm	total added molar	mean totoal added dpm	use for specific bound: average total added molar	use for specific bound: specific bound/molar
15	3249.64	2.7479E-11	3268.93	2.76421E-11	5.05437E-12
15	3315.85	2.80388E-11		2.76421E-11	5.71051E-12
15	3241.30	2.74084E-11		2.76421E-11	4.90025E-12
30	6810.14	5.75866E-11	6985.72	5.90713E-11	9.19819E-12
30	6912.33	5.84507E-11		5.90713E-11	7.21403E-12
30	7234.69	6.11766E-11		5.90713E-11	9.76466E-12
40	9508.31	8.04023E-11	9562.91	8.0864E-11	1.00525E-11
40	9773.82	8.26475E-11		8.0864E-11	9.83044E-12
40	9406.59	7.95422E-11		8.0864E-11	1.08715E-11
50	12620.00	1.06715E-10	12604.53	1.06584E-10	1.1225E-11
50	12627.10	1.06775E-10		1.06584E-10	1.01759E-11
50	12566.50	1.06262E-10		1.06584E-10	1.14198E-11
150	38501.30	3.25567E-10	38282.20	3.23714E-10	1.19951E-11
150	38391.00	3.24634E-10		3.23714E-10	1.51478E-11
150	37954.30	3.20942E-10		3.23714E-10	1.5966E-11
300	80799.90	6.83244E-10	81870.57	6.92298E-10	1.57929E-11
300	82559.90	6.98127E-10		6.92298E-10	1.91843E-11
300	82251.90	6.95522E-10		6.92298E-10	1.85492E-11
500	140382.00	1.18707E-09	140599.67	1.18891E-09	1.15523E-11
500	141043.00	1.19266E-09		1.18891E-09	1.8982E-11
500	140374.00	1.187E-09		1.18891E-09	1.65974E-11
1500	452306.00	3.8247E-09	450318.67	3.8079E-09	1.54661E-11
1500	449005.00	3.79679E-09		3.8079E-09	1.30272E-11
1500	449645.00	3.8022E-09		3.8079E-09	2.03701E-11

total bound dpm	total bound/molar	average Bound/dpm	average bound/molar	NSB dpm	NSB molar	Hot Final Concentration (nM)
688.5	5.82196E-12	708.29	5.9893E-12	67.4	5.69766E-13	0.03
766.1	6.4781E-12		0	115.2	9.73878E-13	0.03
670.3	5.66785E-12		0	89.8	7.59138E-13	0.03
1215.8	1.02811E-11	1159.96	9.80859E-12	178.6	1.51028E-12	0.06
981.2	8.29699E-12		0	108.0	9.13249E-13	0.06
1282.8	1.08476E-11		0	97.6	8.25348E-13	0.06
1345.4	1.13764E-11	1368.90	1.15754E-11	126.2	1.06711E-12	0.08
1319.1	1.11543E-11		0	148.9	1.2594E-12	0.08
1442.2	1.21954E-11		0	194.6	1.64512E-12	0.08
1470.0	1.24299E-11	1436.28	1.21452E-11	145.5	1.23035E-12	0.10
1345.9	1.13809E-11		0	145.7	1.23225E-12	0.10
1493.0	1.26248E-11		0	136.3	1.15234E-12	0.10
1722.5	1.45654E-11	2003.31	1.694E-11	269.6	2.28008E-12	0.30
2095.3	1.77182E-11		0	264.2	2.23429E-12	0.30
2192.1	1.85364E-11		0	378.0	3.19675E-12	0.30
2680.7	2.26681E-11	2923.05	2.47173E-11	891.9	7.54216E-12	0.60
3081.8	2.60594E-11		0	487.1	4.11888E-12	0.60
3006.7	2.54243E-11		0	1060.1	8.96442E-12	0.60
2799.0	2.36687E-11	3290.80	2.7827E-11	1916.8	1.62086E-11	1.00
3677.7	3.10984E-11		0	1603.5	1.35588E-11	1.00
3395.7	2.87138E-11		0	778.4	6.58173E-12	1.00
5908.3	4.99607E-11	6005.48	5.07824E-11	3486.9	2.94852E-11	3.00
5619.9	4.75218E-11		0	3735.1	3.15837E-11	3.00
6488.3	5.48647E-11		0	5015.9	4.24147E-11	3.00

	"[Pr sm] run title and date"					
One site binding (hyperbola)		Bmax molar	2.85E-11		KD molar	3.08E-10
Best-fit values		mole to molar conversion value	0.0005		molar to nM converison	1.00E+09
BMAX	2.85E-11	DPM/mole (DPM/mmole)*1000	2.37E+17		**kd nM**	3.08E-01
KD	3.08E-10	Bmax molar to Bmax moles	1.4255E-14			
Std. Error		DPM/((DPM/mmole)*1000)	1.4255E-14			
BMAX		Bmax DPM	3.37E+03			
KD						
95% Confidence Intervals						
BMAX		assay date	3/3/2008			
KD		Bmax(dpm)	3371.56843			
Goodness of Fit		DPM/Ci (definition)	2.22E+12			
Degrees of Freedom		Ci/mmole	106.54			
R^2 (unweighted)		DPM/mmole	2.37E+14			
Weighted Sum of Squares ($1/Y^2$)		DPM/pmole	2.37E+05			
Absolute Sum of Squares		1/(DPM/mmole)	4.23E-15			
Sy.x		1/(DPM/pmole)	4.23E-06			
Data		SA(dpm/pmole)	2.37E+05			
Number of X values		protein/tube (ug)	50			
Number of Y replicates		protein./tube(mg)	0.05			
Total number of values		bmax pmole	0.014255			
Number of missing values		bmax pmole/mg	0.2851			
		Bmax fmole/mg	285.1			
		Bmax (fmole/100 ug)	28.51			
		Bmax(fmole/100 ug)/Bmax molar	1.00E+12			

APPENDIX C: Raw Data, Prism and Within Run SD Files for Competitive Binding Assays with Test Chemicals

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

PPR-07024-T7-08-21-FR
10 July 2008

Result:
SDwithin-run = 5.13

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	-0.338591221
Run ID:	032608	1	1	2	-7.0	-1.13245405
Assay start date:	3/26/2008	1	1	3	-7.0	-1.372357653
Technician ID:	SMR	1	2	1	-8.0	8.803916972
		1	2	2	-8.0	9.730817253
		1	2	3	-8.0	8.012235084
		1	3	1	-8.5	25.49248393
		1	3	2	-8.5	26.57859297
		1	3	3	-8.5	25.25148986
		1	4	1	-9.0	56.22740681
		1	4	2	-9.0	62.28933465
		1	4	3	-9.0	47.83187119
		1	5	1	-9.5	77.51667057
		1	5	2	-9.5	89.93277247
		1	5	3	-9.5	91.3263943
		1	6	1	-10.0	95.75479671
		1	6	2	-10.0	105.8296575
		1	6	3	-10.0	104.8384195
		1	7	1	-11.0	104.16
		1	7	2	-11.0	115.08
		1	7	3	-11.0	115.48
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 5.45

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	81.25153347
Run ID:	032608	1	1	2	-4.0	84.76175937
Assay start date:	3/26/2008	1	1	3	-4.0	74.64218923
Technician ID:	SMR	1	2	1	-4.5	10.87472125
		1	2	2	-4.5	12.37520923
		1	2	3	-4.5	13.00877284
		1	3	1	-5.5	23.88731074
		1	3	2	-5.5	21.55152202
		1	3	3	-5.5	29.45852666
		1	4	1	-6.0	43.76441466
		1	4	2	-6.0	41.87789997
		1	4	3	-6.0	47.8242379
		1	5	1	-6.5	76.71844586
		1	5	2	-6.5	91.59792156
		1	5	3	-6.5	79.04223939
		1	6	1	-7.0	81.36385198
		1	6	2	-7.0	86.73224032
		1	6	3	-7.0	96.07430469
		1	7	1	-7.5	94.25
		1	7	2	-7.5	108.52
		1	7	3	-7.5	103.97
		1	8	1	-8.5	107.10
		1	8	2	-8.5	110.71
		1	8	3	-8.5	114.07
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 4.94

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	R1881	1	1	1	-4.0	14.13086742
Run ID:	032608	1	1	2	-4.0	15.76003097
Assay start date:	3/26/2008	1	1	3	-4.0	11.22803383
Technician ID:	SMR	1	2	1	-5.0	63.23586341
		1	2	2	-5.0	60.73650406
		1	2	3	-5.0	57.87837978
		1	3	1	-6.0	101.9246812
		1	3	2	-6.0	111.6713103
		1	3	3	-6.0	100.7306155
		1	4	1	-7.0	103.5920112
		1	4	2	-7.0	115.1477315
		1	4	3	-7.0	111.5557203
		1	5	1	-8.0	109.3835023
		1	5	2	-8.0	107.4860829
		1	5	3	-8.0	112.4150114
		1	6	1	-9.0	105.7784054
		1	6	2	-9.0	119.3754873
		1	6	3	-9.0	111.7759955
		1	7	1	-10.0	119.81
		1	7	2	-10.0	110.78
		1	7	3	-10.0	115.04
		1	8	1	-11.0	106.30
		1	8	2	-11.0	117.47
		1	8	3	-11.0	116.61
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 3.44

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	-0.402945318
Run ID:	032708	1	1	2	-7.0	1.979097742
Assay start date:	3/27/2008	1	1	3	-7.0	-1.056989193
Technician ID:	SMR	1	2	1	-8.0	10.10374782
		1	2	2	-8.0	9.71692031
		1	2	3	-8.0	13.05712492
		1	3	1	-8.5	26.41794337
		1	3	2	-8.5	34.17612528
		1	3	3	-8.5	27.22468231
		1	4	1	-9.0	45.84839076
		1	4	2	-9.0	48.5994469
		1	4	3	-9.0	42.93191497
		1	5	1	-9.5	92.38475764
		1	5	2	-9.5	100.2205595
		1	5	3	-9.5	99.81210024
		1	6	1	-10.0	109.031065
		1	6	2	-10.0	110.3175209
		1	6	3	-10.0	100.0385979
		1	7	1	-11.0	
		1	7	2	-11.0	113.72
		1	7	3	-11.0	113.50
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 5.23

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	
Run ID:	032708	1	1	2	-4.0	
Assay start date:	3/26/2008	1	1	3	-4.0	
Technician ID:	SMR	1	2	1	-4.5	13.97584025
		1	2	2	-4.5	15.01925654
		1	2	3	-4.5	12.30891909
		1	3	1	-5.5	32.31579037
		1	3	2	-5.5	34.50823705
		1	3	3	-5.5	43.85699259
		1	4	1	-6.0	53.11540354
		1	4	2	-6.0	53.86360937
		1	4	3	-6.0	58.25359258
		1	5	1	-6.5	90.30683226
		1	5	2	-6.5	89.70877657
		1	5	3	-6.5	89.26977825
		1	6	1	-7.0	105.3880151
		1	6	2	-7.0	112.3992637
		1	6	3	-7.0	108.0767208
		1	7	1	-7.5	116.57
		1	7	2	-7.5	128.12
		1	7	3	-7.5	133.53
		1	8	1	-8.5	132.95
		1	8	2	-8.5	115.11
		1	8	3	-8.5	127.63
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 5.34

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	R1881	1	1	1	-4.0	10.82777693
Run ID:	032708	1	1	2	-4.0	9.962504878
Assay start date:	3/27/2008	1	1	3	-4.0	10.61654875
Technician ID:	SMR	1	2	1	-5.0	43.65467162
		1	2	2	-5.0	45.68297111
		1	2	3	-5.0	48.44420692
		1	3	1	-6.0	100.3376258
		1	3	2	-6.0	104.2886106
		1	3	3	-6.0	104.3471438
		1	4	1	-7.0	93.81754636
		1	4	2	-7.0	107.0969274
		1	4	3	-7.0	113.6628154
		1	5	1	-8.0	123.1184574
		1	5	2	-8.0	125.6811897
		1	5	3	-8.0	123.100643
		1	6	1	-9.0	119.5059466
		1	6	2	-9.0	118.2423949
		1	6	3	-9.0	114.6731477
		1	7	1	-10.0	112.34
		1	7	2	-10.0	116.91
		1	7	3	-10.0	116.93
		1	8	1	-11.0	125.05
		1	8	2	-11.0	112.10
		1	8	3	-11.0	131.67
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 4.58

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	-1.614850828
Run ID:	033108	1	1	2	-7.0	-0.397009815
Assay start date:	3/31/2008	1	1	3	-7.0	1.135420266
Technician ID:	SMR	1	2	1	-8.0	10.83524986
		1	2	2	-8.0	14.41250889
		1	2	3	-8.0	15.71853017
		1	3	1	-8.5	34.9215712
		1	3	2	-8.5	32.73851373
		1	3	3	-8.5	45.30420207
		1	4	1	-9.0	60.2614823
		1	4	2	-9.0	59.9218691
		1	4	3	-9.0	56.24093868
		1	5	1	-9.5	87.91076316
		1	5	2	-9.5	86.07208538
		1	5	3	-9.5	78.24549069
		1	6	1	-10.0	94.49568433
		1	6	2	-10.0	103.1611832
		1	6	3	-10.0	93.65201365
		1	7	1	-11.0	105.93
		1	7	2	-11.0	109.98
		1	7	3	-11.0	98.44
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 5.63

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	
Run ID:	033108	1	1	2	-4.0	
Assay start date:	3/31/2008	1	1	3	-4.0	
Technician ID:	SMR	1	2	1	-4.5	12.18774453
		1	2	2	-4.5	10.23824561
		1	2	3	-4.5	12.01734212
		1	3	1	-5.5	33.68347255
		1	3	2	-5.5	39.56056833
		1	3	3	-5.5	30.74254142
		1	4	1	-6.0	64.43336233
		1	4	2	-6.0	61.01935597
		1	4	3	-6.0	54.46660867
		1	5	1	-6.5	79.23811453
		1	5	2	-6.5	87.35427416
		1	5	3	-6.5	90.29163042
		1	6	1	-7.0	90.88744305
		1	6	2	-7.0	97.9192237
		1	6	3	-7.0	78.26217345
		1	7	1	-7.5	97.12
		1	7	2	-7.5	102.46
		1	7	3	-7.5	99.65
		1	8	1	-8.5	91.47
		1	8	2	-8.5	107.78
		1	8	3	-8.5	97.61
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 5.88

Provide information in all blue cells.

Laboratory Code: HAMNER

Compound ID: R1881
Run ID: 033108
Assay start date: 3/31/2008
Technician ID: SMR

run	xgroup	rep	x	y
1	1	1	-4.0	17.73833498
1	1	2	-4.0	16.95067069
1	1	3	-4.0	18.87752873
1	2	1	-5.0	69.44414654
1	2	2	-5.0	62.52557029
1	2	3	-5.0	55.1756257
1	3	1	-6.0	86.3795247
1	3	2	-6.0	96.85271909
1	3	3	-6.0	99.42067152
1	4	1	-7.0	91.37362616
1	4	2	-7.0	96.89919248
1	4	3	-7.0	107.7358326
1	5	1	-8.0	108.5640121
1	5	2	-8.0	114.0919617
1	5	3	-8.0	109.1383755
1	6	1	-9.0	93.05620102
1	6	2	-9.0	103.2863039
1	6	3	-9.0	99.12634008
1	7	1	-10.0	94.54
1	7	2	-10.0	110.50
1	7	3	-10.0	98.77
1	8	1	-11.0	106.76
1	8	2	-11.0	109.81
1	8	3	-11.0	110.26
1	9	1		
1	9	2		
1	9	3		
1	10	1		
1	10	2		
1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 1.67

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	0.742681904
Run ID:	060408	1	1	2	-7.0	0.937902368
Assay start date:	6/4/2008	1	1	3	-7.0	2.085503785
Technician ID:	JZ	1	2	1	-8.0	-0.921019592
		1	2	2	-8.0	-1.511168812
		1	2	3	-8.0	-0.410689576
		1	3	1	-8.5	5.810079445
		1	3	2	-8.5	4.081304462
		1	3	3	-8.5	3.323823415
		1	4	1	-9.0	7.933142066
		1	4	2	-9.0	5.811361681
		1	4	3	-9.0	5.892463122
		1	5	1	-9.5	16.68280147
		1	5	2	-9.5	14.18019693
		1	5	3	-9.5	13.81508017
		1	6	1	-10.0	22.72469854
		1	6	2	-10.0	22.3461183
		1	6	3	-10.0	22.62917194
		1	7	1	-11.0	70.40
		1	7	2	-11.0	67.22
		1	7	3	-11.0	63.18
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 1.72

Provide information in all blue cells.

Laboratory Code: HAMNER

Compound ID: Norethynodrel
Run ID: 060408
Assay start date: 6/4/2008
Technician ID: JZ

run	xgroup	rep	x	y
1	1	1	-4.0	3.9392968
1	1	2	-4.0	4.243186784
1	1	3	-4.0	4.559578572
1	2	1	-4.5	8.46462898
1	2	2	-4.5	6.167182232
1	2	3	-4.5	6.701233618
1	3	1	-5.5	26.64481522
1	3	2	-5.5	24.52047037
1	3	3	-5.5	23.9110876
1	4	1	-6.0	35.08417347
1	4	2	-6.0	33.96317845
1	4	3	-6.0	33.50862571
1	5	1	-6.5	44.16689373
1	5	2	-6.5	39.63130366
1	5	3	-6.5	43.12187121
1	6	1	-7.0	55.61822485
1	6	2	-7.0	51.27817581
1	6	3	-7.0	55.15341422
1	7	1	-7.5	60.69
1	7	2	-7.5	56.21
1	7	3	-7.5	55.68
1	8	1	-8.5	62.18
1	8	2	-8.5	60.62
1	8	3	-8.5	61.73
1	9	1		
1	9	2		
1	9	3		
1	10	1		
1	10	2		
1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 3.82

Provide information in all blue cells.

Laboratory Code: HAMNER

Compound ID: Estradiol
Run ID: 060508
Assay start date: 6/5/2008
Technician ID: JZ

run	xgroup	rep	x	y
1	1	1	-7.0	4.943761444
1	1	2	-7.0	2.252088547
1	1	3	-7.0	0.668751548
1	2	1	-8.0	2.486811312
1	2	2	-8.0	2.818756525
1	2	3	-8.0	2.052088084
1	3	1	-8.5	9.83960611
1	3	2	-8.5	16.02712043
1	3	3	-8.5	9.184049037
1	4	1	-9.0	22.6118579
1	4	2	-9.0	22.84380288
1	4	3	-9.0	16.22434311
1	5	1	-9.5	50.18414394
1	5	2	-9.5	45.52718872
1	5	3	-9.5	58.57166336
1	6	1	-10.0	86.43561675
1	6	2	-10.0	88.87590018
1	6	3	-10.0	88.02450932
1	7	1	-11.0	139.09
1	7	2	-11.0	133.79
1	7	3	-11.0	129.39
1	8	1		
1	8	2		
1	8	3		
1	9	1		
1	9	2		
1	9	3		
1	10	1		
1	10	2		
1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 9.28

Laboratory Code: HAMNER

Provide information in all blue cells.

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	
Run ID:	060508	1	1	2	-4.0	
Assay start date:	6/5/2008	1	1	3	-4.0	
Technician ID:	JZ	1	2	1	-4.5	17.76323556
		1	2	2	-4.5	14.43128341
		1	2	3	-4.5	13.54378135
		1	3	1	-5.5	30.36048695
		1	3	2	-5.5	52.32581557
		1	3	3	-5.5	48.58691803
		1	4	1	-6.0	67.70362894
		1	4	2	-6.0	60.60639029
		1	4	3	-6.0	62.73556189
		1	5	1	-6.5	121.3662532
		1	5	2	-6.5	110.0328936
		1	5	3	-6.5	113.4676238
		1	6	1	-7.0	104.5134364
		1	6	2	-7.0	113.6759576
		1	6	3	-7.0	121.625976
		1	7	1	-7.5	179.77
		1	7	2	-7.5	144.11
		1	7	3	-7.5	145.68
		1	8	1	-8.5	128.18
		1	8	2	-8.5	136.86
		1	8	3	-8.5	130.92
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 3.65

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	3.188299128
Run ID:	060608	1	1	2	-7.0	0.396045677
Assay start date:	6/6/2008	1	1	3	-7.0	-0.317625128
Technician ID:	JZ	1	2	1	-8.0	1.686041799
		1	2	2	-8.0	-5.108945419
		1	2	3	-8.0	-3.427284656
		1	3	1	-8.5	1.203689709
		1	3	2	-8.5	-1.676622572
		1	3	3	-8.5	3.772510312
		1	4	1	-9.0	13.22897705
		1	4	2	-9.0	14.23902496
		1	4	3	-9.0	15.084784
		1	5	1	-9.5	44.37223036
		1	5	2	-9.5	39.02692804
		1	5	3	-9.5	33.68162571
		1	6	1	-10.0	79.98282634
		1	6	2	-10.0	70.49153036
		1	6	3	-10.0	71.19008659
		1	7	1	-11.0	126.17
		1	7	2	-11.0	121.36
		1	7	3	-11.0	128.21
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 4.35

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	8.835892954
Run ID:	060608	1	1	2	-4.0	9.665880271
Assay start date:	6/6/2008	1	1	3	-4.0	6.690937607
Technician ID:	JZ	1	2	1	-4.5	53.08151137
		1	2	2	-4.5	48.27639081
		1	2	3	-4.5	47.68626523
		1	3	1	-5.5	46.5585865
		1	3	2	-5.5	30.63899604
		1	3	3	-5.5	42.19901733
		1	4	1	-6.0	45.778543
		1	4	2	-6.0	40.26632319
		1	4	3	-6.0	49.73330442
		1	5	1	-6.5	111.161566
		1	5	2	-6.5	102.2472525
		1	5	3	-6.5	108.4107134
		1	6	1	-7.0	101.8023583
		1	6	2	-7.0	100.4827902
		1	6	3	-7.0	
		1	7	1	-7.5	113.64
		1	7	2	-7.5	119.41
		1	7	3	-7.5	115.21
		1	8	1	-8.5	88.25
		1	8	2	-8.5	82.53
		1	8	3	-8.5	91.33
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 7.99

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	11.92324155
Run ID:	030508	1	1	2	-7.0	-8.09556443
Assay start date:	3/5/2008	1	1	3	-7.0	0.692246745
Technician ID:	SMR	1	2	1	-8.0	20.45901617
		1	2	2	-8.0	9.670622146
		1	2	3	-8.0	24.72519591
		1	3	1	-8.5	27.84867334
		1	3	2	-8.5	34.96443712
		1	3	3	-8.5	27.77763864
		1	4	1	-9.0	54.55498586
		1	4	2	-9.0	48.71921261
		1	4	3	-9.0	64.51486947
		1	5	1	-9.5	81.87943682
		1	5	2	-9.5	81.32618585
		1	5	3	-9.5	82.57134205
		1	6	1	-10.0	107.3440083
		1	6	2	-10.0	99.0944215
		1	6	3	-10.0	82.47435238
		1	7	1	-11.0	112.26
		1	7	2	-11.0	102.73
		1	7	3	-11.0	115.59
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 11.19

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	
Run ID:	030508	1	1	2	-4.0	
Assay start date:	3/5/2008	1	1	3	-4.0	
Technician ID:	SMR	1	2	1	-4.5	-4.335506874
		1	2	2	-4.5	-2.1443598
		1	2	3	-4.5	0.171781013
		1	3	1	-5.5	10.81059237
		1	3	2	-5.5	14.53171745
		1	3	3	-5.5	24.18902059
		1	4	1	-6.0	31.72416227
		1	4	2	-6.0	54.85756633
		1	4	3	-6.0	42.88685448
		1	5	1	-6.5	70.75567708
		1	5	2	-6.5	81.50650468
		1	5	3	-6.5	86.34369408
		1	6	1	-7.0	107.7729485
		1	6	2	-7.0	99.05890415
		1	6	3	-7.0	95.094621185
		1	7	1	-7.5	109.72
		1	7	2	-7.5	103.96
		1	7	3	-7.5	100.04
		1	8	1	-8.5	114.37
		1	8	2	-8.5	115.83
		1	8	3	-8.5	69.74
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 6.63

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	R1881	1	1	1	-3.0	
Run ID:	030508	1	1	2	-3.0	
Assay start date:	3/5/2008	1	1	3	-3.0	
Technician ID:	SMR	1	2	1	-4.0	25.64728087
		1	2	2	-4.0	15.26597028
		1	2	3	-4.0	16.25977296
		1	3	1	-5.0	62.16935855
		1	3	2	-5.0	68.47232151
		1	3	3	-5.0	55.58977009
		1	4	1	-6.0	86.15791103
		1	4	2	-6.0	104.461639
		1	4	3	-6.0	95.24830268
		1	5	1	-7.0	107.0707979
		1	5	2	-7.0	119.574953
		1	5	3	-7.0	110.5603772
		1	6	1	-8.0	93.08652572
		1	6	2	-8.0	114.3047252
		1	6	3	-8.0	102.3934366
		1	7	1	-9.0	109.75
		1	7	2	-9.0	117.30
		1	7	3	-9.0	113.18
		1	8	1	-10.0	109.88
		1	8	2	-10.0	117.76
		1	8	3	-10.0	108.59
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 8.42

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	-9.651723333
Run ID:	030608	1	1	2	-7.0	-13.614004
Assay start date:	3/6/2008	1	1	3	-7.0	2.758025934
Technician ID:	SMR	1	2	1	-8.0	0.542780671
		1	2	2	-8.0	16.80979157
		1	2	3	-8.0	9.591920827
		1	3	1	-8.5	23.46865474
		1	3	2	-8.5	25.20146881
		1	3	3	-8.5	11.84326638
		1	4	1	-9.0	30.23253694
		1	4	2	-9.0	25.46401639
		1	4	3	-9.0	38.47215537
		1	5	1	-9.5	78.94386587
		1	5	2	-9.5	86.6080675
		1	5	3	-9.5	68.38070129
		1	6	1	-10.0	90.36796774
		1	6	2	-10.0	98.95764962
		1	6	3	-10.0	72.84291632
		1	7	1	-11.0	98.19
		1	7	2	-11.0	99.37
		1	7	3	-11.0	
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 9.00

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	
Run ID:	030608	1	1	2	-4.0	
Assay start date:	3/6/2008	1	1	3	-4.0	
Technician ID:	SMR	1	2	1	-4.5	3.966838781
		1	2	2	-4.5	7.273844426
		1	2	3	-4.5	2.060086932
		1	3	1	-5.5	16.78244286
		1	3	2	-5.5	17.05046019
		1	3	3	-5.5	23.60430432
		1	4	1	-6.0	43.59949095
		1	4	2	-6.0	46.3628043
		1	4	3	-6.0	52.93962135
		1	5	1	-6.5	53.53801106
		1	5	2	-6.5	76.28775945
		1	5	3	-6.5	62.99081813
		1	6	1	-7.0	112.6691973
		1	6	2	-7.0	88.16584985
		1	6	3	-7.0	94.31383918
		1	7	1	-7.5	106.77
		1	7	2	-7.5	86.83
		1	7	3	-7.5	103.58
		1	8	1	-8.5	101.08
		1	8	2	-8.5	128.02
		1	8	3	-8.5	121.03
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 11.38

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	R1881	1	1	1	-3.0	
Run ID:	030608	1	1	2	-3.0	
Assay start date:	3/6/2008	1	1	3	-3.0	
Technician ID:	SMR	1	2	1	-4.0	10.30408116
		1	2	2	-4.0	
		1	2	3	-4.0	8.094305635
		1	3	1	-5.0	49.54291194
		1	3	2	-5.0	73.61852565
		1	3	3	-5.0	58.47499964
		1	4	1	-6.0	92.51429426
		1	4	2	-6.0	83.1161846
		1	4	3	-6.0	70.68346242
		1	5	1	-7.0	100.134738
		1	5	2	-7.0	111.6321344
		1	5	3	-7.0	117.5263277
		1	6	1	-8.0	105.1723698
		1	6	2	-8.0	107.9717834
		1	6	3	-8.0	138.4196459
		1	7	1	-9.0	139.99
		1	7	2	-9.0	107.69
		1	7	3	-9.0	122.13
		1	8	1	-10.0	119.16
		1	8	2	-10.0	101.90
		1	8	3	-10.0	104.68
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 3.67

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	-2.595547061
Run ID:	031008	1	1	2	-7.0	-2.599826219
Assay start date:	3/10/2008	1	1	3	-7.0	-1.74684739
Technician ID:	SMR	1	2	1	-8.0	8.13087567
		1	2	2	-8.0	6.859965743
		1	2	3	-8.0	6.594657947
		1	3	1	-8.5	26.81439271
		1	3	2	-8.5	16.55083224
		1	3	3	-8.5	21.99891357
		1	4	1	-9.0	40.04697565
		1	4	2	-9.0	40.97697932
		1	4	3	-9.0	38.44514417
		1	5	1	-9.5	78.74625425
		1	5	2	-9.5	82.66311021
		1	5	3	-9.5	77.7121244
		1	6	1	-10.0	96.07541778
		1	6	2	-10.0	85.17782873
		1	6	3	-10.0	99.1200387
		1	7	1	-11.0	
		1	7	2	-11.0	110.19
		1	7	3	-11.0	105.74
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 2.96

Provide information in all blue cells.

Laboratory Code: HAMNER

Compound ID: Norethynodrel
Run ID: 031008
Assay start date: 3/10/2008
Technician ID: SMR

run	xgroup	rep	x	y
1	1	1	-4.0	
1	1	2	-4.0	
1	1	3	-4.0	
1	2	1	-4.5	4.591298808
1	2	2	-4.5	5.209637139
1	2	3	-4.5	9.438871634
1	3	1	-5.5	15.93392029
1	3	2	-5.5	12.70529558
1	3	3	-5.5	18.63906134
1	4	1	-6.0	48.86346752
1	4	2	-6.0	46.80162656
1	4	3	-6.0	42.08742082
1	5	1	-6.5	73.14055727
1	5	2	-6.5	74.35726452
1	5	3	-6.5	72.78182119
1	6	1	-7.0	102.4841701
1	6	2	-7.0	94.5556035
1	6	3	-7.0	103.0818258
1	7	1	-7.5	98.48
1	7	2	-7.5	104.64
1	7	3	-7.5	104.05
1	8	1	-8.5	109.55
1	8	2	-8.5	104.11
1	8	3	-8.5	106.29
1	9	1		
1	9	2		
1	9	3		
1	10	1		
1	10	2		
1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 5.30

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	R1881	1	1	1	-3.0	
Run ID:	031008	1	1	2	-3.0	
Assay start date:	3/10/2008	1	1	3	-3.0	
Technician ID:	SMR	1	2	1	-4.0	5.163279594
		1	2	2	-4.0	5.1932337
		1	2	3	-4.0	7.700107098
		1	3	1	-5.0	33.63465738
		1	3	2	-5.0	34.3756649
		1	3	3	-5.0	38.52145582
		1	4	1	-6.0	76.00830632
		1	4	2	-6.0	91.75917374
		1	4	3	-6.0	85.71914222
		1	5	1	-7.0	105.5409153
		1	5	2	-7.0	104.94112
		1	5	3	-7.0	108.0855879
		1	6	1	-8.0	102.4820305
		1	6	2	-8.0	123.2159774
		1	6	3	-8.0	123.990505
		1	7	1	-9.0	116.19
		1	7	2	-9.0	
		1	7	3	-9.0	116.45
		1	8	1	-10.0	112.33
		1	8	2	-10.0	111.26
		1	8	3	-10.0	110.98
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 7.13

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	0.887399353
Run ID:	031108	1	1	2	-7.0	1.042897448
Assay start date:	3/11/2008	1	1	3	-7.0	-1.556747969
Technician ID:	SMR	1	2	1	-8.0	7.353999658
		1	2	2	-8.0	32.76662917
		1	2	3	-8.0	8.659476843
		1	3	1	-8.5	20.75157412
		1	3	2	-8.5	23.06566849
		1	3	3	-8.5	29.19582747
		1	4	1	-9.0	51.50202913
		1	4	2	-9.0	55.53579107
		1	4	3	-9.0	53.33407941
		1	5	1	-9.5	79.14817673
		1	5	2	-9.5	93.53175047
		1	5	3	-9.5	76.48067759
		1	6	1	-10.0	102.1018159
		1	6	2	-10.0	104.8930067
		1	6	3	-10.0	110.9121966
		1	7	1	-11.0	106.58
		1	7	2	-11.0	115.13
		1	7	3	-11.0	108.01
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 5.07

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	1.404783922
Run ID:	031108	1	1	2	-4.0	
Assay start date:	3/11/2008	1	1	3	-4.0	
Technician ID:	SMR	1	2	1	-4.5	5.756610142
		1	2	2	-4.5	5.821636617
		1	2	3	-4.5	7.783739847
		1	3	1	-5.5	15.42859162
		1	3	2	-5.5	16.44639733
		1	3	3	-5.5	15.40526691
		1	4	1	-6.0	39.11095142
		1	4	2	-6.0	35.15493854
		1	4	3	-6.0	39.01765257
		1	5	1	-6.5	66.28141621
		1	5	2	-6.5	71.388115
		1	5	3	-6.5	64.85154055
		1	6	1	-7.0	82.06942048
		1	6	2	-7.0	92.56766229
		1	6	3	-7.0	94.17706757
		1	7	1	-7.5	95.87
		1	7	2	-7.5	106.25
		1	7	3	-7.5	92.90
		1	8	1	-8.5	92.62
		1	8	2	-8.5	104.72
		1	8	3	-8.5	111.88
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 2.88

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	3.890950034
Run ID:	031208	1	1	2	-4.0	
Assay start date:	3/12/2008	1	1	3	-4.0	
Technician ID:	SMR	1	2	1	-4.5	8.387323034
		1	2	2	-4.5	8.11631591
		1	2	3	-4.5	6.605581487
		1	3	1	-5.5	15.11233875
		1	3	2	-5.5	18.38657386
		1	3	3	-5.5	20.52401225
		1	4	1	-6.0	36.57922995
		1	4	2	-6.0	34.60074766
		1	4	3	-6.0	37.93621995
		1	5	1	-6.5	68.08445954
		1	5	2	-6.5	60.73469423
		1	5	3	-6.5	70.54111306
		1	6	1	-7.0	83.0452254
		1	6	2	-7.0	85.03152521
		1	6	3	-7.0	83.16183664
		1	7	1	-7.5	98.26
		1	7	2	-7.5	104.04
		1	7	3	-7.5	95.10
		1	8	1	-8.5	98.94
		1	8	2	-8.5	102.19
		1	8	3	-8.5	104.36
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 6.17

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	R1881	1	1	1	-3.0	
Run ID:	031108	1	1	2	-3.0	
Assay start date:	3/11/2008	1	1	3	-3.0	
Technician ID:	SMR	1	2	1	-4.0	7.819080323
		1	2	2	-4.0	12.16242483
		1	2	3	-4.0	10.75304664
		1	3	1	-5.0	50.73443399
		1	3	2	-5.0	47.55167072
		1	3	3	-5.0	31.05332289
		1	4	1	-6.0	82.13868781
		1	4	2	-6.0	77.65468821
		1	4	3	-6.0	87.62140926
		1	5	1	-7.0	91.53501358
		1	5	2	-7.0	96.42754908
		1	5	3	-7.0	105.1573535
		1	6	1	-8.0	102.4481526
		1	6	2	-8.0	119.8879707
		1	6	3	-8.0	109.6653846
		1	7	1	-9.0	104.92
		1	7	2	-9.0	108.33
		1	7	3	-9.0	108.71
		1	8	1	-10.0	106.28
		1	8	2	-10.0	107.77
		1	8	3	-10.0	96.89
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 5.96

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	1.023877074
Run ID:	031208	1	1	2	-7.0	-0.431483297
Assay start date:	3/12/2008	1	1	3	-7.0	-1.245807587
Technician ID:	SMR	1	2	1	-8.0	6.851833153
		1	2	2	-8.0	6.042069079
		1	2	3	-8.0	7.447918533
		1	3	1	-8.5	16.47388896
		1	3	2	-8.5	39.46063502
		1	3	3	-8.5	42.26907663
		1	4	1	-9.0	38.4332835
		1	4	2	-9.0	44.07752802
		1	4	3	-9.0	45.54852341
		1	5	1	-9.5	72.27920683
		1	5	2	-9.5	73.02968809
		1	5	3	-9.5	73.35867511
		1	6	1	-10.0	89.93831765
		1	6	2	-10.0	81.18139996
		1	6	3	-10.0	86.37288018
		1	7	1	-11.0	102.12
		1	7	2	-11.0	105.91
		1	7	3	-11.0	98.79
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 4.39

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	R1881	1	1	1	-3.0	
Run ID:	031208	1	1	2	-3.0	
Assay start date:	3/12/2008	1	1	3	-3.0	
Technician ID:	SMR	1	2	1	-4.0	10.53713916
		1	2	2	-4.0	13.09542035
		1	2	3	-4.0	14.74230979
		1	3	1	-5.0	44.72116993
		1	3	2	-5.0	33.63202748
		1	3	3	-5.0	31.65680249
		1	4	1	-6.0	79.87978402
		1	4	2	-6.0	79.2569888
		1	4	3	-6.0	78.08761912
		1	5	1	-7.0	94.79494771
		1	5	2	-7.0	98.1610386
		1	5	3	-7.0	107.3850527
		1	6	1	-8.0	100.6176921
		1	6	2	-8.0	106.0241539
		1	6	3	-8.0	101.4000949
		1	7	1	-9.0	99.53
		1	7	2	-9.0	103.78
		1	7	3	-9.0	110.96
		1	8	1	-10.0	99.96
		1	8	2	-10.0	103.80
		1	8	3	-10.0	107.64
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 6.65

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	1.157228561
Run ID:	031708	1	1	2	-7.0	-0.984782614
Assay start date:	3/17/2008	1	1	3	-7.0	-1.361887024
Technician ID:	SMR	1	2	1	-8.0	7.453201028
		1	2	2	-8.0	8.877333288
		1	2	3	-8.0	7.907324835
		1	3	1	-8.5	
		1	3	2	-8.5	24.02690351
		1	3	3	-8.5	20.77392385
		1	4	1	-9.0	37.93253779
		1	4	2	-9.0	44.61070085
		1	4	3	-9.0	59.7871552
		1	5	1	-9.5	69.50685787
		1	5	2	-9.5	89.09521584
		1	5	3	-9.5	73.98197552
		1	6	1	-10.0	88.86219583
		1	6	2	-10.0	99.85032079
		1	6	3	-10.0	94.91308676
		1	7	1	-11.0	110.28
		1	7	2	-11.0	97.19
		1	7	3	-11.0	105.46
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 3.78

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	3.244744879
Run ID:	031708	1	1	2	-4.0	2.127237014
Assay start date:	3/17/2008	1	1	3	-4.0	3.629841868
Technician ID:	SMR	1	2	1	-4.5	4.570059799
		1	2	2	-4.5	9.304572966
		1	2	3	-4.5	8.527839606
		1	3	1	-5.5	27.29950131
		1	3	2	-5.5	23.13173466
		1	3	3	-5.5	24.80145707
		1	4	1	-6.0	41.16008651
		1	4	2	-6.0	44.9747265
		1	4	3	-6.0	37.82718107
		1	5	1	-6.5	72.38273312
		1	5	2	-6.5	65.4618863
		1	5	3	-6.5	66.46967785
		1	6	1	-7.0	80.6565056
		1	6	2	-7.0	84.46024661
		1	6	3	-7.0	89.65396977
		1	7	1	-7.5	95.52
		1	7	2	-7.5	100.82
		1	7	3	-7.5	93.81
		1	8	1	-8.5	93.30
		1	8	2	-8.5	101.80
		1	8	3	-8.5	106.11
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 7.11

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	R1881	1	1	1	-3.0	26.1631019
Run ID:	031708	1	1	2	-3.0	31.95990147
Assay start date:	3/17/2008	1	1	3	-3.0	51.104308
Technician ID:	SMR	1	2	1	-4.0	12.3766297
		1	2	2	-4.0	11.76919369
		1	2	3	-4.0	11.41824682
		1	3	1	-5.0	37.51765028
		1	3	2	-5.0	39.83985778
		1	3	3	-5.0	39.29054962
		1	4	1	-6.0	76.5425072
		1	4	2	-6.0	89.85015125
		1	4	3	-6.0	72.05867037
		1	5	1	-7.0	86.22951296
		1	5	2	-7.0	98.13191631
		1	5	3	-7.0	92.42448829
		1	6	1	-8.0	94.94215068
		1	6	2	-8.0	103.3634226
		1	6	3	-8.0	100.6590245
		1	7	1	-9.0	103.92
		1	7	2	-9.0	112.33
		1	7	3	-9.0	101.45
		1	8	1	-10.0	109.71
		1	8	2	-10.0	95.27
		1	8	3	-10.0	97.63
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 3.25

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	-0.673195914
Run ID:	031808	1	1	2	-7.0	0.789328765
Assay start date:	3/18/2008	1	1	3	-7.0	0.617751843
Technician ID:	SMR	1	2	1	-8.0	6.377941252
		1	2	2	-8.0	13.51224452
		1	2	3	-8.0	8.5807192
		1	3	1	-8.5	18.37334089
		1	3	2	-8.5	18.3988152
		1	3	3	-8.5	17.06066505
		1	4	1	-9.0	45.76645809
		1	4	2	-9.0	41.46429789
		1	4	3	-9.0	44.97150999
		1	5	1	-9.5	69.74302173
		1	5	2	-9.5	76.59186296
		1	5	3	-9.5	69.81494917
		1	6	1	-10.0	95.69908854
		1	6	2	-10.0	95.65713087
		1	6	3	-10.0	86.05556645
		1	7	1	-11.0	105.80
		1	7	2	-11.0	100.20
		1	7	3	-11.0	102.42
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 4.33

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	-0.228144859
Run ID:	031808	1	1	2	-4.0	
Assay start date:	3/18/2008	1	1	3	-4.0	2.149956232
Technician ID:	SMR	1	2	1	-4.5	5.072757856
		1	2	2	-4.5	3.269327066
		1	2	3	-4.5	4.80602692
		1	3	1	-5.5	17.7462235
		1	3	2	-5.5	11.03224622
		1	3	3	-5.5	12.93457725
		1	4	1	-6.0	35.68163115
		1	4	2	-6.0	37.04675409
		1	4	3	-6.0	
		1	5	1	-6.5	66.58870365
		1	5	2	-6.5	68.54872647
		1	5	3	-6.5	67.2270597
		1	6	1	-7.0	90.93089846
		1	6	2	-7.0	84.80582712
		1	6	3	-7.0	90.2857992
		1	7	1	-7.5	83.13
		1	7	2	-7.5	104.40
		1	7	3	-7.5	97.72
		1	8	1	-8.5	105.42
		1	8	2	-8.5	105.64
		1	8	3	-8.5	101.70
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 5.42

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	R1881	1	1	1	-3.0	5.017313785
Run ID:	031808	1	1	2	-3.0	4.239598305
Assay start date:	3/18/2008	1	1	3	-3.0	3.990099987
Technician ID:	SMR	1	2	1	-4.0	8.507293268
		1	2	2	-4.0	12.67084329
		1	2	3	-4.0	7.801505232
		1	3	1	-5.0	47.08138166
		1	3	2	-5.0	44.76471859
		1	3	3	-5.0	42.22852697
		1	4	1	-6.0	88.90868836
		1	4	2	-6.0	81.81259654
		1	4	3	-6.0	71.46703263
		1	5	1	-7.0	89.92766047
		1	5	2	-7.0	95.672865
		1	5	3	-7.0	107.6667661
		1	6	1	-8.0	102.1763047
		1	6	2	-8.0	108.813859
		1	6	3	-8.0	111.9914037
		1	7	1	-9.0	100.71
		1	7	2	-9.0	105.04
		1	7	3	-9.0	95.51
		1	8	1	-10.0	108.73
		1	8	2	-10.0	102.17
		1	8	3	-10.0	108.95
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 5.02

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	-2.692379462
Run ID:	032408	1	1	2	-7.0	3.289501243
Assay start date:	3/24/2008	1	1	3	-7.0	0.272665303
Technician ID:	SMR	1	2	1	-8.0	7.291892777
		1	2	2	-8.0	7.975079305
		1	2	3	-8.0	8.332286085
		1	3	1	-8.5	23.93818571
		1	3	2	-8.5	29.8652287
		1	3	3	-8.5	25.54142723
		1	4	1	-9.0	34.16465785
		1	4	2	-9.0	51.67464479
		1	4	3	-9.0	47.99442483
		1	5	1	-9.5	77.37144555
		1	5	2	-9.5	80.39437456
		1	5	3	-9.5	82.39823605
		1	6	1	-10.0	89.42507988
		1	6	2	-10.0	82.53152217
		1	6	3	-10.0	95.14952798
		1	7	1	-11.0	103.44
		1	7	2	-11.0	109.66
		1	7	3	-11.0	113.63
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 4.80

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	2.518726699
Run ID:	032408	1	1	2	-4.0	4.308568774
Assay start date:	3/24/2008	1	1	3	-4.0	2.024425632
Technician ID:	SMR	1	2	1	-4.5	5.554603512
		1	2	2	-4.5	9.227968758
		1	2	3	-4.5	7.026082188
		1	3	1	-5.5	15.41625253
		1	3	2	-5.5	16.96846451
		1	3	3	-5.5	18.2244005
		1	4	1	-6.0	38.1411538
		1	4	2	-6.0	43.94176539
		1	4	3	-6.0	40.70100879
		1	5	1	-6.5	65.16472259
		1	5	2	-6.5	71.42155351
		1	5	3	-6.5	69.58068189
		1	6	1	-7.0	79.0866474
		1	6	2	-7.0	79.9785219
		1	6	3	-7.0	100.5129611
		1	7	1	-7.5	101.46
		1	7	2	-7.5	99.56
		1	7	3	-7.5	
		1	8	1	-8.5	103.72
		1	8	2	-8.5	106.00
		1	8	3	-8.5	110.27
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 3.79

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	R1881	1	1	1	-3.0	
Run ID:	032408	1	1	2	-3.0	
Assay start date:	3/24/2008	1	1	3	-3.0	
Technician ID:	SMR	1	2	1	-4.0	10.78398891
		1	2	2	-4.0	9.339167457
		1	2	3	-4.0	9.374202663
		1	3	1	-5.0	55.16978747
		1	3	2	-5.0	55.33506224
		1	3	3	-5.0	51.10113369
		1	4	1	-6.0	87.41893348
		1	4	2	-6.0	91.91943426
		1	4	3	-6.0	93.11596273
		1	5	1	-7.0	88.29252874
		1	5	2	-7.0	103.2906437
		1	5	3	-7.0	103.2914053
		1	6	1	-8.0	106.027198
		1	6	2	-8.0	108.5436398
		1	6	3	-8.0	108.3585625
		1	7	1	-9.0	105.66
		1	7	2	-9.0	107.98
		1	7	3	-9.0	105.55
		1	8	1	-10.0	107.59
		1	8	2	-10.0	111.00
		1	8	3	-10.0	116.63
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 3.17

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	2.014472735
Run ID:	032608	1	1	2	-7.0	-0.658981935
Assay start date:	3/26/2008	1	1	3	-7.0	-2.985199469
Technician ID:	SMR	1	2	1	-8.0	11.74118174
		1	2	2	-8.0	9.900553635
		1	2	3	-8.0	13.00534194
		1	3	1	-8.5	33.55201436
		1	3	2	-8.5	27.67611094
		1	3	3	-8.5	32.43841401
		1	4	1	-9.0	62.6941623
		1	4	2	-9.0	56.61479963
		1	4	3	-9.0	66.4310307
		1	5	1	-9.5	98.37142166
		1	5	2	-9.5	91.34258244
		1	5	3	-9.5	95.7237385
		1	6	1	-10.0	110.5586313
		1	6	2	-10.0	110.9682626
		1	6	3	-10.0	104.0954088
		1	7	1	-11.0	119.75
		1	7	2	-11.0	
		1	7	3	-11.0	
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 3.86

Laboratory Code: HAMNER

Provide information in all blue cells.

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	0.563130017
Run ID:	032608	1	1	2	-4.0	
Assay start date:	3/26/2008	1	1	3	-4.0	1.831359402
Technician ID:	SMR	1	2	1	-4.5	9.108418918
		1	2	2	-4.5	9.693025191
		1	2	3	-4.5	10.66420406
		1	3	1	-5.5	37.54795422
		1	3	2	-5.5	29.71884191
		1	3	3	-5.5	29.59134077
		1	4	1	-6.0	63.47544586
		1	4	2	-6.0	63.97188645
		1	4	3	-6.0	61.2658783
		1	5	1	-6.5	89.21846777
		1	5	2	-6.5	83.41038411
		1	5	3	-6.5	95.15676536
		1	6	1	-7.0	89.63216827
		1	6	2	-7.0	85.97125799
		1	6	3	-7.0	97.82072526
		1	7	1	-7.5	108.37
		1	7	2	-7.5	106.06
		1	7	3	-7.5	115.44
		1	8	1	-8.5	121.23
		1	8	2	-8.5	
		1	8	3	-8.5	
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 4.54

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	R1881	1	1	1	-3.0	
Run ID:	032608	1	1	2	-3.0	
Assay start date:	3/26/2008	1	1	3	-3.0	
Technician ID:	SMR	1	2	1	-4.0	16.64454989
		1	2	2	-4.0	18.63709424
		1	2	3	-4.0	18.97212382
		1	3	1	-5.0	59.87150417
		1	3	2	-5.0	62.16109904
		1	3	3	-5.0	59.53783099
		1	4	1	-6.0	112.5050582
		1	4	2	-6.0	109.3446577
		1	4	3	-6.0	103.8838112
		1	5	1	-7.0	111.6600241
		1	5	2	-7.0	106.4338339
		1	5	3	-7.0	117.8628187
		1	6	1	-8.0	108.6501835
		1	6	2	-8.0	127.8933602
		1	6	3	-8.0	123.0510298
		1	7	1	-9.0	113.86
		1	7	2	-9.0	116.30
		1	7	3	-9.0	114.45
		1	8	1	-10.0	112.52
		1	8	2	-10.0	117.75
		1	8	3	-10.0	116.81
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 9.08

Provide information in all blue cells.

Laboratory Code: HAMNER

Compound ID: Estradiol
Run ID: 040208
Assay start date: 4/2/2008
Technician ID: SMR

run	xgroup	rep	x	y
1	1	1	-7.0	-1.560595942
1	1	2	-7.0	-1.711371507
1	1	3	-7.0	0.640107677
1	2	1	-8.0	12.45740074
1	2	2	-8.0	31.26097254
1	2	3	-8.0	14.55483342
1	3	1	-8.5	33.25410158
1	3	2	-8.5	33.49782098
1	3	3	-8.5	35.84103849
1	4	1	-9.0	65.22368484
1	4	2	-9.0	63.9926953
1	4	3	-9.0	74.44991015
1	5	1	-9.5	97.35953432
1	5	2	-9.5	102.4032868
1	5	3	-9.5	120.5263031
1	6	1	-10.0	115.1624108
1	6	2	-10.0	93.65107505
1	6	3	-10.0	116.1465828
1	7	1	-11.0	116.97
1	7	2	-11.0	138.55
1	7	3	-11.0	132.59
1	8	1		
1	8	2		
1	8	3		
1	9	1		
1	9	2		
1	9	3		
1	10	1		
1	10	2		
1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 4.99

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	
Run ID:	040208	1	1	2	-4.0	
Assay start date:	4/2/2008	1	1	3	-4.0	
Technician ID:	SMR	1	2	1	-4.5	8.196441972
		1	2	2	-4.5	8.778890044
		1	2	3	-4.5	15.391328
		1	3	1	-5.5	17.11078906
		1	3	2	-5.5	22.64817658
		1	3	3	-5.5	23.37004041
		1	4	1	-6.0	47.15850023
		1	4	2	-6.0	42.81389201
		1	4	3	-6.0	44.88240883
		1	5	1	-6.5	72.87399569
		1	5	2	-6.5	73.6041212
		1	5	3	-6.5	85.35222273
		1	6	1	-7.0	123.5986134
		1	6	2	-7.0	106.2583908
		1	6	3	-7.0	106.2439328
		1	7	1	-7.5	120.82
		1	7	2	-7.5	119.54
		1	7	3	-7.5	114.54
		1	8	1	-8.5	123.81
		1	8	2	-8.5	124.78
		1	8	3	-8.5	119.96
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 7.27

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	R1881	1	1	1	-3.0	
Run ID:	040208	1	1	2	-3.0	
Assay start date:	4/2/2008	1	1	3	-3.0	
Technician ID:	SMR	1	2	1	-4.0	14.60337076
		1	2	2	-4.0	9.410908165
		1	2	3	-4.0	15.78375755
		1	3	1	-5.0	48.13647598
		1	3	2	-5.0	55.34995077
		1	3	3	-5.0	49.6297737
		1	4	1	-6.0	102.3557821
		1	4	2	-6.0	91.60631054
		1	4	3	-6.0	93.28859407
		1	5	1	-7.0	117.265007
		1	5	2	-7.0	117.4157826
		1	5	3	-7.0	118.4856694
		1	6	1	-8.0	118.9947951
		1	6	2	-8.0	125.8984571
		1	6	3	-8.0	133.7356884
		1	7	1	-9.0	134.45
		1	7	2	-9.0	126.68
		1	7	3	-9.0	101.87
		1	8	1	-10.0	130.94
		1	8	2	-10.0	123.82
		1	8	3	-10.0	123.25
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 5.05

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	0.693754273
Run ID:	040308	1	1	2	-7.0	0.399829425
Assay start date:	4/3/2008	1	1	3	-7.0	1.252000028
Technician ID:	SMR	1	2	1	-8.0	13.82838877
		1	2	2	-8.0	10.63539222
		1	2	3	-8.0	12.09127177
		1	3	1	-8.5	44.38811472
		1	3	2	-8.5	28.49925638
		1	3	3	-8.5	31.27145405
		1	4	1	-9.0	56.55322013
		1	4	2	-9.0	61.49179195
		1	4	3	-9.0	50.40300128
		1	5	1	-9.5	78.85027454
		1	5	2	-9.5	84.19590056
		1	5	3	-9.5	74.17073721
		1	6	1	-10.0	92.5040353
		1	6	2	-10.0	95.70654741
		1	6	3	-10.0	92.58861799
		1	7	1	-11.0	81.54
		1	7	2	-11.0	94.75
		1	7	3	-11.0	86.53
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 2.87

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	-0.626792977
Run ID:	040308	1	1	2	-4.0	2.26699231
Assay start date:	4/3/2008	1	1	3	-4.0	-0.090750178
Technician ID:	SMR	1	2	1	-4.5	5.577347346
		1	2	2	-4.5	7.041685169
		1	2	3	-4.5	6.782650681
		1	3	1	-5.5	19.24485279
		1	3	2	-5.5	19.15709825
		1	3	3	-5.5	18.88114722
		1	4	1	-6.0	46.03324805
		1	4	2	-6.0	44.93790221
		1	4	3	-6.0	39.90734671
		1	5	1	-6.5	63.81675865
		1	5	2	-6.5	67.59231848
		1	5	3	-6.5	68.65806038
		1	6	1	-7.0	87.8287271
		1	6	2	-7.0	85.65706653
		1	6	3	-7.0	87.95031472
		1	7	1	-7.5	85.74
		1	7	2	-7.5	94.88
		1	7	3	-7.5	89.86
		1	8	1	-8.5	99.18
		1	8	2	-8.5	89.54
		1	8	3	-8.5	94.21
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 6.72

Provide information in all blue cells.

Laboratory Code: HAMNER

Compound ID: Estradiol
Run ID: 040708
Assay start date: 4/7/2008
Technician ID: SMR

run	xgroup	rep	x	y
1	1	1	-7.0	-0.431014543
1	1	2	-7.0	4.008656494
1	1	3	-7.0	1.138980569
1	2	1	-8.0	14.90208146
1	2	2	-8.0	9.593543028
1	2	3	-8.0	5.540035278
1	3	1	-8.5	30.86269281
1	3	2	-8.5	21.32240813
1	3	3	-8.5	22.66999733
1	4	1	-9.0	62.69099495
1	4	2	-9.0	52.00875303
1	4	3	-9.0	57.31125767
1	5	1	-9.5	103.3322674
1	5	2	-9.5	103.7039495
1	5	3	-9.5	85.7714919
1	6	1	-10.0	114.2389667
1	6	2	-10.0	112.0161143
1	6	3	-10.0	121.9972285
1	7	1	-11.0	128.90
1	7	2	-11.0	137.25
1	7	3	-11.0	117.18
1	8	1		
1	8	2		
1	8	3		
1	9	1		
1	9	2		
1	9	3		
1	10	1		
1	10	2		
1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 3.63

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	
Run ID:	040708	1	1	2	-4.0	10.67962727
Assay start date:	4/7/2008	1	1	3	-4.0	1.210179425
Technician ID:	SMR	1	2	1	-4.5	6.716626542
		1	2	2	-4.5	11.35661978
		1	2	3	-4.5	8.315583901
		1	3	1	-5.5	26.09840326
		1	3	2	-5.5	32.43992848
		1	3	3	-5.5	26.56421272
		1	4	1	-6.0	42.79996541
		1	4	2	-6.0	40.02200326
		1	4	3	-6.0	36.57308241
		1	5	1	-6.5	92.83586652
		1	5	2	-6.5	
		1	5	3	-6.5	94.97665925
		1	6	1	-7.0	124.8994869
		1	6	2	-7.0	121.0511284
		1	6	3	-7.0	122.0563597
		1	7	1	-7.5	142.89
		1	7	2	-7.5	148.81
		1	7	3	-7.5	144.34
		1	8	1	-8.5	143.98
		1	8	2	-8.5	145.02
		1	8	3	-8.5	133.47
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 3.26

Laboratory Code: HAMNER

Provide information in all blue cells.

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	-1.511929334
Run ID:	040808	1	1	2	-7.0	6.381655304
Assay start date:	4/8/2008	1	1	3	-7.0	-1.839264989
Technician ID:	SMR	1	2	1	-8.0	7.086365184
		1	2	2	-8.0	4.567757091
		1	2	3	-8.0	3.547178728
		1	3	1	-8.5	17.86863485
		1	3	2	-8.5	18.63589295
		1	3	3	-8.5	16.05994899
		1	4	1	-9.0	36.66228829
		1	4	2	-9.0	34.52209689
		1	4	3	-9.0	34.00398919
		1	5	1	-9.5	83.69437553
		1	5	2	-9.5	85.05688413
		1	5	3	-9.5	76.98920696
		1	6	1	-10.0	93.57178103
		1	6	2	-10.0	85.45927764
		1	6	3	-10.0	89.13502769
		1	7	1	-11.0	92.35
		1	7	2	-11.0	95.75
		1	7	3	-11.0	89.32
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 3.06

Laboratory Code: HAMNER

Provide information in all blue cells.

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	
Run ID:	040808	1	1	2	-4.0	
Assay start date:	4/8/2008	1	1	3	-4.0	
Technician ID:	SMR	1	2	1	-4.5	-0.785327579
		1	2	2	-4.5	-1.213782846
		1	2	3	-4.5	2.365017479
		1	3	1	-5.5	13.95520158
		1	3	2	-5.5	10.11369875
		1	3	3	-5.5	11.53875557
		1	4	1	-6.0	42.38128001
		1	4	2	-6.0	38.90881165
		1	4	3	-6.0	37.58174704
		1	5	1	-6.5	47.87718311
		1	5	2	-6.5	58.48014789
		1	5	3	-6.5	50.49691081
		1	6	1	-7.0	93.86158775
		1	6	2	-7.0	102.5411949
		1	6	3	-7.0	101.437219
		1	7	1	-7.5	93.83
		1	7	2	-7.5	94.46
		1	7	3	-7.5	92.90
		1	8	1	-8.5	108.57
		1	8	2	-8.5	109.39
		1	8	3	-8.5	104.27
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 3.99

Provide information in all blue cells.

Laboratory Code: HAMNER

Compound ID:	Estradiol
Run ID:	040908
Assay start date:	4/9/2008
Technician ID:	SMR

run	xgroup	rep	x	y
1	1	1	-7.0	-2.489233521
1	1	2	-7.0	-2.164474149
1	1	3	-7.0	-1.376109006
1	2	1	-8.0	7.025274751
1	2	2	-8.0	11.57661262
1	2	3	-8.0	16.38563999
1	3	1	-8.5	35.34052667
1	3	2	-8.5	30.58327254
1	3	3	-8.5	26.44494387
1	4	1	-9.0	74.30106135
1	4	2	-9.0	65.02423929
1	4	3	-9.0	70.57103523
1	5	1	-9.5	127.4533453
1	5	2	-9.5	115.0571859
1	5	3	-9.5	122.2077754
1	6	1	-10.0	143.3406679
1	6	2	-10.0	146.1340691
1	6	3	-10.0	144.2384628
1	7	1	-11.0	154.33
1	7	2	-11.0	151.60
1	7	3	-11.0	156.85
1	8	1		
1	8	2		
1	8	3		
1	9	1		
1	9	2		
1	9	3		
1	10	1		
1	10	2		
1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 8.62

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	-0.959569811
Run ID:	040908	1	1	2	-4.0	2.018567764
Assay start date:	4/9/2008	1	1	3	-4.0	2.881062763
Technician ID:	SMR	1	2	1	-4.5	10.19167863
		1	2	2	-4.5	9.59981644
		1	2	3	-4.5	14.92069282
		1	3	1	-5.5	37.87035512
		1	3	2	-5.5	35.62527946
		1	3	3	-5.5	34.11326571
		1	4	1	-6.0	65.91732756
		1	4	2	-6.0	68.0541501
		1	4	3	-6.0	34.41802179
		1	5	1	-6.5	57.07234133
		1	5	2	-6.5	62.95330996
		1	5	3	-6.5	59.23740381
		1	6	1	-7.0	
		1	6	2	-7.0	149.9582284
		1	6	3	-7.0	141.7262843
		1	7	1	-7.5	138.05
		1	7	2	-7.5	156.77
		1	7	3	-7.5	136.68
		1	8	1	-8.5	150.08
		1	8	2	-8.5	149.81
		1	8	3	-8.5	164.62
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 4.49

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	-1.309879549
Run ID:	041008	1	1	2	-7.0	-1.68254839
Assay start date:	4/10/2008	1	1	3	-7.0	-2.405731663
Technician ID:	SMR	1	2	1	-8.0	5.29213492
		1	2	2	-8.0	3.507913608
		1	2	3	-8.0	5.385499938
		1	3	1	-8.5	16.48723352
		1	3	2	-8.5	17.3362222
		1	3	3	-8.5	18.93846085
		1	4	1	-9.0	45.41456442
		1	4	2	-9.0	43.90727324
		1	4	3	-9.0	33.86420401
		1	5	1	-9.5	
		1	5	2	-9.5	71.90649256
		1	5	3	-9.5	62.11740783
		1	6	1	-10.0	87.93125275
		1	6	2	-10.0	87.50794526
		1	6	3	-10.0	75.08723299
		1	7	1	-11.0	101.34
		1	7	2	-11.0	103.89
		1	7	3	-11.0	94.85
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 5.30

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	
Run ID:	041008	1	1	2	-4.0	
Assay start date:	4/10/2008	1	1	3	-4.0	
Technician ID:	SMR	1	2	1	-4.5	8.433313904
		1	2	2	-4.5	9.27597275
		1	2	3	-4.5	7.905564186
		1	3	1	-5.5	15.58365004
		1	3	2	-5.5	15.81548013
		1	3	3	-5.5	13.46078274
		1	4	1	-6.0	32.03171773
		1	4	2	-6.0	37.40890977
		1	4	3	-6.0	40.75501705
		1	5	1	-6.5	60.73038346
		1	5	2	-6.5	73.49369786
		1	5	3	-6.5	61.69489156
		1	6	1	-7.0	79.58774334
		1	6	2	-7.0	101.7476929
		1	6	3	-7.0	93.06158135
		1	7	1	-7.5	98.80
		1	7	2	-7.5	95.99
		1	7	3	-7.5	98.57
		1	8	1	-8.5	102.79
		1	8	2	-8.5	95.94
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 4.12

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	0.809879889
Run ID:	041508	1	1	2	-7.0	-1.995660205
Assay start date:	4/15/2008	1	1	3	-7.0	-2.2650824
Technician ID:	SMR	1	2	1	-8.0	14.45845332
		1	2	2	-8.0	14.0341537
		1	2	3	-8.0	13.93735531
		1	3	1	-8.5	29.68806718
		1	3	2	-8.5	28.65716429
		1	3	3	-8.5	30.02040833
		1	4	1	-9.0	56.15920109
		1	4	2	-9.0	52.21466657
		1	4	3	-9.0	57.08523905
		1	5	1	-9.5	87.38958933
		1	5	2	-9.5	81.04606797
		1	5	3	-9.5	75.62535795
		1	6	1	-10.0	89.8692415
		1	6	2	-10.0	99.69911833
		1	6	3	-10.0	91.03082222
		1	7	1	-11.0	91.56
		1	7	2	-11.0	102.41
		1	7	3	-11.0	90.18
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 7.35

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	4.373674064
Run ID:	041508	1	1	2	-4.0	
Assay start date:	4/15/2008	1	1	3	-4.0	
Technician ID:	SMR	1	2	1	-4.5	9.442683251
		1	2	2	-4.5	19.15317539
		1	2	3	-4.5	23.28324016
		1	3	1	-5.5	29.22343489
		1	3	2	-5.5	27.53914285
		1	3	3	-5.5	25.23050117
		1	4	1	-6.0	46.22768595
		1	4	2	-6.0	44.60953948
		1	4	3	-6.0	56.6528729
		1	5	1	-6.5	61.90579903
		1	5	2	-6.5	70.97419516
		1	5	3	-6.5	85.36811622
		1	6	1	-7.0	85.71820374
		1	6	2	-7.0	95.76587695
		1	6	3	-7.0	89.83536207
		1	7	1	-7.5	88.38
		1	7	2	-7.5	102.87
		1	7	3	-7.5	114.00
		1	8	1	-8.5	95.09
		1	8	2	-8.5	99.00
		1	8	3	-8.5	
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 4.28

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	11.01214083
Run ID:	041708	1	1	2	-7.0	-2.623269666
Assay start date:	4/17/2008	1	1	3	-7.0	0.82478613
Technician ID:	SMR	1	2	1	-8.0	5.377824376
		1	2	2	-8.0	9.992858337
		1	2	3	-8.0	12.20829345
		1	3	1	-8.5	31.94845846
		1	3	2	-8.5	29.56527024
		1	3	3	-8.5	35.40563128
		1	4	1	-9.0	69.4339852
		1	4	2	-9.0	69.15682789
		1	4	3	-9.0	60.48107459
		1	5	1	-9.5	98.60661592
		1	5	2	-9.5	94.79570285
		1	5	3	-9.5	98.51726915
		1	6	1	-10.0	88.29162298
		1	6	2	-10.0	95.25884731
		1	6	3	-10.0	97.78
		1	7	1	-11.0	112.55
		1	7	2	-11.0	112.55
		1	7	3	-11.0	115.20
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 7.61

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	-0.873078111
Run ID:	041608	1	1	2	-7.0	4.274137972
Assay start date:	4/16/2008	1	1	3	-7.0	-5.005109194
Technician ID:	SMR	1	2	1	-8.0	21.05035527
		1	2	2	-8.0	21.44673368
		1	2	3	-8.0	13.46213255
		1	3	1	-8.5	37.43019415
		1	3	2	-8.5	42.12970224
		1	3	3	-8.5	46.8862432
		1	4	1	-9.0	62.61590742
		1	4	2	-9.0	66.34870844
		1	4	3	-9.0	61.69767829
		1	5	1	-9.5	82.8853877
		1	5	2	-9.5	98.84888667
		1	5	3	-9.5	97.2091918
		1	6	1	-10.0	93.30529217
		1	6	2	-10.0	117.5043369
		1	6	3	-10.0	109.27
		1	7	1	-11.0	112.30
		1	7	2	-11.0	99.67
		1	7	3	-11.0	120.11
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 4.96

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	
Run ID:	041608	1	1	2	-4.0	
Assay start date:	4/16/2008	1	1	3	-4.0	
Technician ID:	SMR	1	2	1	-4.5	20.21482379
		1	2	2	-4.5	35.21446734
		1	2	3	-4.5	28.96651696
		1	3	1	-5.5	37.60414439
		1	3	2	-5.5	41.55652195
		1	3	3	-5.5	33.76012927
		1	4	1	-6.0	61.23000879
		1	4	2	-6.0	61.79178251
		1	4	3	-6.0	52.6608208
		1	5	1	-6.5	84.99275207
		1	5	2	-6.5	
		1	5	3	-6.5	87.33965448
		1	6	1	-7.0	94.96209691
		1	6	2	-7.0	111.4075236
		1	6	3	-7.0	100.1064613
		1	7	1	-7.5	97.67
		1	7	2	-7.5	90.80
		1	7	3	-7.5	99.00
		1	8	1	-8.5	107.15
		1	8	2	-8.5	108.02
		1	8	3	-8.5	112.16
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 9.26

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	
Run ID:	041708	1	1	2	-4.0	
Assay start date:	4/17/2008	1	1	3	-4.0	
Technician ID:	SMR	1	2	1	-4.5	1.384570968
		1	2	2	-4.5	6.871191746
		1	2	3	-4.5	18.0067162
		1	3	1	-5.5	47.04076826
		1	3	2	-5.5	33.07349835
		1	3	3	-5.5	31.96304569
		1	4	1	-6.0	68.42746653
		1	4	2	-6.0	67.2258437
		1	4	3	-6.0	53.55031834
		1	5	1	-6.5	66.64417802
		1	5	2	-6.5	74.5541019
		1	5	3	-6.5	81.64349425
		1	6	1	-7.0	73.53664281
		1	6	2	-7.0	69.94453815
		1	6	3	-7.0	96.80874018
		1	7	1	-7.5	106.24
		1	7	2	-7.5	99.49
		1	7	3	-7.5	99.82
		1	8	1	-8.5	99.19
		1	8	2	-8.5	98.15
		1	8	3	-8.5	74.72
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 3.93

Laboratory Code: HAMNER

Provide information in all blue cells.

Compound ID: Estradiol-sialinized
Run ID: 050508
Assay start date: 5/5/2008
Technician ID: SMR

run	xgroup	rep	x	y
1	1	1	-7.0	-2.24695264
1	1	2	-7.0	1.743325324
1	1	3	-7.0	-2.194376162
1	2	1	-8.0	5.393239772
1	2	2	-8.0	8.940768447
1	2	3	-8.0	9.153841542
1	3	1	-8.5	24.04820433
1	3	2	-8.5	27.5141011
1	3	3	-8.5	33.00419228
1	4	1	-9.0	59.28412974
1	4	2	-9.0	60.74105162
1	4	3	-9.0	59.48613411
1	5	1	-9.5	80.89859658
1	5	2	-9.5	82.52570021
1	5	3	-9.5	85.07012503
1	6	1	-10.0	92.03650837
1	6	2	-10.0	84.35895899
1	6	3	-10.0	101.42
1	7	1	-11.0	99.33
1	7	2	-11.0	100.20
1	7	3	-11.0	
1	8	1		
1	8	2		
1	8	3		
1	9	1		
1	9	2		
1	9	3		
1	10	1		
1	10	2		
1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 4.41

Laboratory Code: HAMNER

Provide information in all blue cells.

Compound ID: Estradiol-uncoated
Run ID: 050508
Assay start date: 5/5/2008
Technician ID: SMR

run	xgroup	rep	x	y
1	1	1	-7.0	1.567090867
1	1	2	-7.0	5.523507484
1	1	3	-7.0	-2.693458455
1	2	1	-8.0	10.61974889
1	2	2	-8.0	10.14740119
1	2	3	-8.0	11.80532815
1	3	1	-8.5	28.41689507
1	3	2	-8.5	30.91185983
1	3	3	-8.5	31.82156651
1	4	1	-9.0	58.00523934
1	4	2	-9.0	61.3574277
1	4	3	-9.0	62.09353651
1	5	1	-9.5	88.41985565
1	5	2	-9.5	91.13148132
1	5	3	-9.5	98.96491708
1	6	1	-10.0	95.05560066
1	6	2	-10.0	96.94364573
1	6	3	-10.0	99.83559788
1	7	1	-11.0	100.12
1	7	2	-11.0	96.64
1	7	3	-11.0	83.71
1	8	1		
1	8	2		
1	8	3		
1	9	1		
1	9	2		
1	9	3		
1	10	1		
1	10	2		
1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 36.13

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	-5.609689741
Run ID:	050708	1	1	2	-7.0	-12.7569476
Assay start date:	5/7/2008	1	1	3	-7.0	-37.63692994
Technician ID:	SMR	1	2	1	-8.0	52.56169854
		1	2	2	-8.0	20.74600663
		1	2	3	-8.0	
		1	3	1	-8.5	39.4237444
		1	3	2	-8.5	69.45701385
		1	3	3	-8.5	
		1	4	1	-9.0	107.234854
		1	4	2	-9.0	18.12983502
		1	4	3	-9.0	42.90221321
		1	5	1	-9.5	72.71807835
		1	5	2	-9.5	151.5077391
		1	5	3	-9.5	44.8515319
		1	6	1	-10.0	153.3611656
		1	6	2	-10.0	86.50824538
		1	6	3	-10.0	56.49107996
		1	7	1	-11.0	119.85
		1	7	2	-11.0	151.10
		1	7	3	-11.0	96.90
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 50.10

Laboratory Code: HAMNER

Provide information in all blue cells.

Compound ID: Norethynodrel
Run ID: 050708
Assay start date: 5/7/2008
Technician ID: SMR

run	xgroup	rep	x	y
1	1	1	-4.0	
1	1	2	-4.0	
1	1	3	-4.0	
1	2	1	-4.5	-9.514915131
1	2	2	-4.5	68.93216913
1	2	3	-4.5	-44.91155598
1	3	1	-5.5	87.1018982
1	3	2	-5.5	117.0941756
1	3	3	-5.5	14.52326604
1	4	1	-6.0	32.4624148
1	4	2	-6.0	98.93542653
1	4	3	-6.0	120.4818763
1	5	1	-6.5	114.0907754
1	5	2	-6.5	155.4100365
1	5	3	-6.5	-15.3606752
1	6	1	-7.0	121.6794299
1	6	2	-7.0	96.29363489
1	6	3	-7.0	61.61874703
1	7	1	-7.5	34.90
1	7	2	-7.5	56.94
1	7	3	-7.5	50.69
1	8	1	-8.5	138.31
1	8	2	-8.5	75.99
1	8	3	-8.5	32.65
1	9	1		
1	9	2		
1	9	3		
1	10	1		
1	10	2		
1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 19.57

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	-3.405938917
Run ID:	051508	1	1	2	-7.0	13.02343373
Assay start date:	5/15/2008	1	1	3	-7.0	-7.926761441
Technician ID:	SMR	1	2	1	-8.0	2.876449941
		1	2	2	-8.0	53.35516453
		1	2	3	-8.0	31.11447454
		1	3	1	-8.5	32.84159323
		1	3	2	-8.5	16.86779066
		1	3	3	-8.5	22.00651778
		1	4	1	-9.0	88.1537427
		1	4	2	-9.0	82.80273199
		1	4	3	-9.0	59.07519562
		1	5	1	-9.5	71.2188509
		1	5	2	-9.5	131.8441187
		1	5	3	-9.5	107.2932836
		1	6	1	-10.0	109.8949419
		1	6	2	-10.0	104.5193872
		1	6	3	-10.0	120.300283
		1	7	1	-11.0	140.75
		1	7	2	-11.0	124.52
		1	7	3	-11.0	91.95
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 20.18

Provide information in all blue cells.

Laboratory Code: HAMNER

Compound ID:	Norethynodrel	run	xgroup	rep	x	y
Run ID:	051508	1	1	1	-4.0	
Assay start date:	5/15/2008	1	1	2	-4.0	
Technician ID:	SMR	1	1	3	-4.0	
		1	2	1	-4.5	38.68563584
		1	2	2	-4.5	39.76858361
		1	2	3	-4.5	37.57943591
		1	3	1	-5.5	19.38763574
		1	3	2	-5.5	52.53229646
		1	3	3	-5.5	33.44356579
		1	4	1	-6.0	43.84632332
		1	4	2	-6.0	39.21182358
		1	4	3	-6.0	77.9985776
		1	5	1	-6.5	97.73190978
		1	5	2	-6.5	74.65629506
		1	5	3	-6.5	75.09291893
		1	6	1	-7.0	81.15699585
		1	6	2	-7.0	154.8835634
		1	6	3	-7.0	156.1206644
		1	7	1	-7.5	103.40
		1	7	2	-7.5	131.26
		1	7	3	-7.5	142.92
		1	8	1	-8.5	135.55
		1	8	2	-8.5	127.74
		1	8	3	-8.5	115.47
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 7.88

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	3.313010535
Run ID:	051608	1	1	2	-7.0	-2.929290117
Assay start date:	5/16/2008	1	1	3	-7.0	-1.487206613
Technician ID:	SMR	1	2	1	-8.0	12.45409391
		1	2	2	-8.0	25.37995049
		1	2	3	-8.0	28.70189285
		1	3	1	-8.5	38.11371487
		1	3	2	-8.5	39.68455583
		1	3	3	-8.5	28.41514652
		1	4	1	-9.0	87.91918672
		1	4	2	-9.0	82.41115156
		1	4	3	-9.0	73.78370603
		1	5	1	-9.5	106.5382108
		1	5	2	-9.5	
		1	5	3	-9.5	100.8172039
		1	6	1	-10.0	105.2193169
		1	6	2	-10.0	102.6427758
		1	6	3	-10.0	124.8273374
		1	7	1	-11.0	107.71
		1	7	2	-11.0	114.53
		1	7	3	-11.0	128.00
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 12.37

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	
Run ID:	051608	1	1	2	-4.0	
Assay start date:	5/16/2008	1	1	3	-4.0	
Technician ID:	SMR	1	2	1	-4.5	4.130794376
		1	2	2	-4.5	12.88212545
		1	2	3	-4.5	9.469008892
		1	3	1	-5.5	30.34650835
		1	3	2	-5.5	14.86986217
		1	3	3	-5.5	16.18388421
		1	4	1	-6.0	24.11047158
		1	4	2	-6.0	57.61385755
		1	4	3	-6.0	61.95750772
		1	5	1	-6.5	104.6736636
		1	5	2	-6.5	73.46912025
		1	5	3	-6.5	92.94351144
		1	6	1	-7.0	104.2212726
		1	6	2	-7.0	107.7617546
		1	6	3	-7.0	96.81597892
		1	7	1	-7.5	111.22
		1	7	2	-7.5	128.98
		1	7	3	-7.5	91.82
		1	8	1	-8.5	92.75
		1	8	2	-8.5	107.49
		1	8	3	-8.5	108.55
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 13.05

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	
Run ID:	051808	1	1	2	-7.0	
Assay start date:	5/18/2008	1	1	3	-7.0	-10.53
Technician ID:	SMR	1	2	1	-8.0	43.99
		1	2	2	-8.0	
		1	2	3	-8.0	18.96
		1	3	1	-8.5	49.81
		1	3	2	-8.5	83.22
		1	3	3	-8.5	87.97
		1	4	1	-9.0	154.75
		1	4	2	-9.0	138.93
		1	4	3	-9.0	149.42
		1	5	1	-9.5	
		1	5	2	-9.5	
		1	5	3	-9.5	
		1	6	1	-10.0	160.77
		1	6	2	-10.0	
		1	6	3	-10.0	200.63
		1	7	1	-11.0	192.87
		1	7	2	-11.0	169.11
		1	7	3	-11.0	
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 5.26

Laboratory Code: HAMNER

Provide information in all blue cells.

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	
Run ID:	051808	1	1	2	-4.0	
Assay start date:	5/18/2008	1	1	3	-4.0	
Technician ID:	SMR	1	2	1	-4.5	
		1	2	2	-4.5	25.50
		1	2	3	-4.5	24.27
		1	3	1	-5.5	104.38
		1	3	2	-5.5	
		1	3	3	-5.5	107.97
		1	4	1	-6.0	131.27
		1	4	2	-6.0	
		1	4	3	-6.0	125.48
		1	5	1	-6.5	
		1	5	2	-6.5	
		1	5	3	-6.5	129.36
		1	6	1	-7.0	
		1	6	2	-7.0	178.01
		1	6	3	-7.0	156.65
		1	7	1	-7.5	
		1	7	2	-7.5	101.54
		1	7	3	-7.5	121.04
		1	8	1	-8.5	
		1	8	2	-8.5	
		1	8	3	-8.5	
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 4.30

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	5.788712012
Run ID:	051908	1	1	2	-7.0	-2.173060472
Assay start date:	5/19/2008	1	1	3	-7.0	-2.138658459
Technician ID:	SMR	1	2	1	-8.0	11.62902704
		1	2	2	-8.0	14.33302524
		1	2	3	-8.0	17.0966536
		1	3	1	-8.5	45.92668702
		1	3	2	-8.5	44.93132212
		1	3	3	-8.5	48.4024852
		1	4	1	-9.0	89.85461709
		1	4	2	-9.0	72.48160066
		1	4	3	-9.0	
		1	5	1	-9.5	100.0272923
		1	5	2	-9.5	104.3481851
		1	5	3	-9.5	
		1	6	1	-10.0	126.8780632
		1	6	2	-10.0	124.9182952
		1	6	3	-10.0	
		1	7	1	-11.0	123.30
		1	7	2	-11.0	117.58
		1	7	3	-11.0	125.49
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 5.61

Laboratory Code: HAMNER

Provide information in all blue cells.

Compound ID: Norethynodrel
Run ID: 051908
Assay start date: 5/19/2008
Technician ID: SMR

run	xgroup	rep	x	y
1	1	1	-4.0	
1	1	2	-4.0	
1	1	3	-4.0	
1	2	1	-4.5	13.06
1	2	2	-4.5	24.54
1	2	3	-4.5	9.85
1	3	1	-5.5	52.05
1	3	2	-5.5	47.22
1	3	3	-5.5	41.48
1	4	1	-6.0	78.56
1	4	2	-6.0	91.59
1	4	3	-6.0	83.20
1	5	1	-6.5	117.57
1	5	2	-6.5	133.03
1	5	3	-6.5	
1	6	1	-7.0	171.01
1	6	2	-7.0	176.68
1	6	3	-7.0	173.62
1	7	1	-7.5	163.25
1	7	2	-7.5	
1	7	3	-7.5	176.30
1	8	1	-8.5	158.45
1	8	2	-8.5	164.92
1	8	3	-8.5	
1	9	1		
1	9	2		
1	9	3		
1	10	1		
1	10	2		
1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 9.73

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	0.383236941
Run ID:	052108	1	1	2	-7.0	-1.034621822
Assay start date:	5/21/2008	1	1	3	-7.0	-10.95302969
Technician ID:	SMR	1	2	1	-8.0	
		1	2	2	-8.0	46.03394968
		1	2	3	-8.0	50.62713286
		1	3	1	-8.5	102.9181036
		1	3	2	-8.5	
		1	3	3	-8.5	93.15534893
		1	4	1	-9.0	129.1989601
		1	4	2	-9.0	130.7102108
		1	4	3	-9.0	
		1	5	1	-9.5	135.1571743
		1	5	2	-9.5	120.5653983
		1	5	3	-9.5	
		1	6	1	-10.0	165.4472788
		1	6	2	-10.0	
		1	6	3	-10.0	199.8013457
		1	7	1	-11.0	189.29
		1	7	2	-11.0	170.90
		1	7	3	-11.0	202.13
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 14.79

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	
Run ID:	052108	1	1	2	-4.0	
Assay start date:	5/21/2008	1	1	3	-4.0	
Technician ID:	SMR	1	2	1	-4.5	86.86130124
		1	2	2	-4.5	60.89835456
		1	2	3	-4.5	53.66472782
		1	3	1	-5.5	44.58118688
		1	3	2	-5.5	45.25002378
		1	3	3	-5.5	47.36313331
		1	4	1	-6.0	126.9764217
		1	4	2	-6.0	70.97052888
		1	4	3	-6.0	114.8354754
		1	5	1	-6.5	101.7332529
		1	5	2	-6.5	116.4995492
		1	5	3	-6.5	127.3622529
		1	6	1	-7.0	186.8330793
		1	6	2	-7.0	165.4463354
		1	6	3	-7.0	154.1817636
		1	7	1	-7.5	
		1	7	2	-7.5	152.64
		1	7	3	-7.5	175.51
		1	8	1	-8.5	135.55
		1	8	2	-8.5	
		1	8	3	-8.5	131.66
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

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Result:
SDwithin-run = 7.09

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	
Run ID:	052208	1	1	2	-7.0	-0.422458223
Assay start date:	5/22/2008	1	1	3	-7.0	5.753553022
Technician ID:	SMR	1	2	1	-8.0	24.97735437
		1	2	2	-8.0	
		1	2	3	-8.0	40.14055911
		1	3	1	-8.5	
		1	3	2	-8.5	83.24457286
		1	3	3	-8.5	79.26909261
		1	4	1	-9.0	102.5261596
		1	4	2	-9.0	123.1532094
		1	4	3	-9.0	
		1	5	1	-9.5	148.0064032
		1	5	2	-9.5	
		1	5	3	-9.5	143.4171482
		1	6	1	-10.0	
		1	6	2	-10.0	103.5280337
		1	6	3	-10.0	129.4697798
		1	7	1	-11.0	158.55
		1	7	2	-11.0	
		1	7	3	-11.0	160.52
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 8.27

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	
Run ID:	052208	1	1	2	-4.0	
Assay start date:	5/22/2008	1	1	3	-4.0	
Technician ID:	SMR	1	2	1	-4.5	
		1	2	2	-4.5	3.267218491
		1	2	3	-4.5	0.561455568
		1	3	1	-5.5	43.9192566
		1	3	2	-5.5	33.16882711
		1	3	3	-5.5	42.61596127
		1	4	1	-6.0	
		1	4	2	-6.0	77.20287365
		1	4	3	-6.0	100.7754178
		1	5	1	-6.5	
		1	5	2	-6.5	121.9904732
		1	5	3	-6.5	102.0841793
		1	6	1	-7.0	
		1	6	2	-7.0	145.9745432
		1	6	3	-7.0	125.9206622
		1	7	1	-7.5	152.78
		1	7	2	-7.5	
		1	7	3	-7.5	148.43
		1	8	1	-8.5	161.31
		1	8	2	-8.5	
		1	8	3	-8.5	187.20
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 2.90

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	-1.274727861
Run ID:	052708	1	1	2	-7.0	-0.195080511
Assay start date:	5/27/2008	1	1	3	-7.0	-1.010525697
Technician ID:	SMR	1	2	1	-8.0	12.67089009
		1	2	2	-8.0	12.99322712
		1	2	3	-8.0	10.43996495
		1	3	1	-8.5	32.66097603
		1	3	2	-8.5	39.00857576
		1	3	3	-8.5	35.93106175
		1	4	1	-9.0	67.74328616
		1	4	2	-9.0	67.56628628
		1	4	3	-9.0	65.59852517
		1	5	1	-9.5	99.64219379
		1	5	2	-9.5	102.1913035
		1	5	3	-9.5	108.1734841
		1	6	1	-10.0	127.654371
		1	6	2	-10.0	128.9738246
		1	6	3	-10.0	132.8465404
		1	7	1	-11.0	131.64
		1	7	2	-11.0	138.26
		1	7	3	-11.0	130.19
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 3.76

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	
Run ID:	052708	1	1	2	-4.0	
Assay start date:	5/27/2008	1	1	3	-4.0	
Technician ID:	SMR	1	2	1	-4.5	8.864614126
		1	2	2	-4.5	13.79621483
		1	2	3	-4.5	12.83906593
		1	3	1	-5.5	23.90389408
		1	3	2	-5.5	32.77205513
		1	3	3	-5.5	36.70861546
		1	4	1	-6.0	58.78169409
		1	4	2	-6.0	63.54823333
		1	4	3	-6.0	55.7950158
		1	5	1	-6.5	95.30543725
		1	5	2	-6.5	96.22106126
		1	5	3	-6.5	102.2520336
		1	6	1	-7.0	118.3071164
		1	6	2	-7.0	
		1	6	3	-7.0	119.6639425
		1	7	1	-7.5	131.04
		1	7	2	-7.5	139.62
		1	7	3	-7.5	130.50
		1	8	1	-8.5	139.36
		1	8	2	-8.5	137.89
		1	8	3	-8.5	142.93
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 5.09

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	-6.012923075
Run ID:	052808	1	1	2	-7.0	-3.231913945
Assay start date:	5/28/2008	1	1	3	-7.0	7.392834955
Technician ID:	SMR	1	2	1	-8.0	11.69117458
		1	2	2	-8.0	2.308346367
		1	2	3	-8.0	7.459253951
		1	3	1	-8.5	9.109422431
		1	3	2	-8.5	0.758951534
		1	3	3	-8.5	1.372182083
		1	4	1	-9.0	5.97456038
		1	4	2	-9.0	2.070154109
		1	4	3	-9.0	3.838273564
		1	5	1	-9.5	2.207000142
		1	5	2	-9.5	10.62789808
		1	5	3	-9.5	3.203285068
		1	6	1	-10.0	3.864612131
		1	6	2	-10.0	13.10257822
		1	6	3	-10.0	1.902961466
		1	7	1	-11.0	5.35
		1	7	2	-11.0	13.82
		1	7	3	-11.0	4.52
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 6.14

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	
Run ID:	052808	1	1	2	-4.0	
Assay start date:	5/28/2008	1	1	3	-4.0	
Technician ID:	SMR	1	2	1	-4.5	-2.030073681
		1	2	2	-4.5	13.69233309
		1	2	3	-4.5	7.852042146
		1	3	1	-5.5	13.94025917
		1	3	2	-5.5	10.89987241
		1	3	3	-5.5	8.893560698
		1	4	1	-6.0	21.24348574
		1	4	2	-6.0	19.44616483
		1	4	3	-6.0	11.19417727
		1	5	1	-6.5	15.79884587
		1	5	2	-6.5	16.41894735
		1	5	3	-6.5	13.92365442
		1	6	1	-7.0	18.22142146
		1	6	2	-7.0	29.56017456
		1	6	3	-7.0	17.98952756
		1	7	1	-7.5	5.97
		1	7	2	-7.5	28.46
		1	7	3	-7.5	13.23
		1	8	1	-8.5	25.61
		1	8	2	-8.5	35.71
		1	8	3	-8.5	32.46
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 3.34

Provide information in all blue cells.

Laboratory Code: HAMNER

Compound ID: Estradiol
Run ID: 053008
Assay start date: 5/30/2008
Technician ID: JZ

run	xgroup	rep	x	y
1	1	1	-7.0	1.962854796
1	1	2	-7.0	0.03741791
1	1	3	-7.0	0.654813434
1	2	1	-8.0	6.729833173
1	2	2	-8.0	3.802674429
1	2	3	-8.0	2.589763348
1	3	1	-8.5	15.64258919
1	3	2	-8.5	10.78904226
1	3	3	-8.5	13.83321125
1	4	1	-9.0	25.73115548
1	4	2	-9.0	25.31733876
1	4	3	-9.0	24.26614916
1	5	1	-9.5	45.52966955
1	5	2	-9.5	43.9210165
1	5	3	-9.5	44.24921597
1	6	1	-10.0	88.00819389
1	6	2	-10.0	74.83550389
1	6	3	-10.0	75.54517578
1	7	1	-11.0	90.41
1	7	2	-11.0	85.15
1	7	3	-11.0	91.08
1	8	1		
1	8	2		
1	8	3		
1	9	1		
1	9	2		
1	9	3		
1	10	1		
1	10	2		
1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 2.39

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	4.4362421
Run ID:	053008	1	1	2	-4.0	-0.798777259
Assay start date:	5/30/2008	1	1	3	-4.0	1.428222618
Technician ID:	JZ	1	2	1	-4.5	2.464191377
		1	2	2	-4.5	2.958868838
		1	2	3	-4.5	3.186230209
		1	3	1	-5.5	66.88356371
		1	3	2	-5.5	58.60057015
		1	3	3	-5.5	58.92972092
		1	4	1	-6.0	78.71681935
		1	4	2	-6.0	73.95364619
		1	4	3	-6.0	76.92932137
		1	5	1	-6.5	105.0916897
		1	5	2	-6.5	106.6470698
		1	5	3	-6.5	107.4946806
		1	6	1	-7.0	99.6616533
		1	6	2	-7.0	98.68466532
		1	6	3	-7.0	96.6460234
		1	7	1	-7.5	109.99
		1	7	2	-7.5	105.69
		1	7	3	-7.5	105.99
		1	8	1	-8.5	110.54
		1	8	2	-8.5	108.44
		1	8	3	-8.5	110.47
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 3.88

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	-1.6333228
Run ID:	060208	1	1	2	-7.0	-0.617976999
Assay start date:	6/2/2008	1	1	3	-7.0	3.728072993
Technician ID:	SMR	1	2	1	-8.0	9.200458002
		1	2	2	-8.0	18.88735023
		1	2	3	-8.0	10.06370747
		1	3	1	-8.5	37.21958309
		1	3	2	-8.5	29.17800324
		1	3	3	-8.5	31.04580789
		1	4	1	-9.0	50.29061876
		1	4	2	-9.0	56.55637113
		1	4	3	-9.0	47.04829487
		1	5	1	-9.5	74.6486412
		1	5	2	-9.5	77.89404812
		1	5	3	-9.5	79.65446042
		1	6	1	-10.0	
		1	6	2	-10.0	87.77054692
		1	6	3	-10.0	96.67537624
		1	7	1	-11.0	97.12
		1	7	2	-11.0	99.45
		1	7	3	-11.0	
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = **3.77**

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	
Run ID:	060208	1	1	2	-4.0	
Assay start date:	6/2/2008	1	1	3	-4.0	
Technician ID:	SMR	1	2	1	-4.5	5.416547841
		1	2	2	-4.5	5.707894536
		1	2	3	-4.5	7.594711227
		1	3	1	-5.5	24.84890993
		1	3	2	-5.5	20.74744729
		1	3	3	-5.5	19.78245771
		1	4	1	-6.0	23.64704059
		1	4	2	-6.0	34.1473399
		1	4	3	-6.0	35.07584691
		1	5	1	-6.5	25.7912906
		1	5	2	-6.5	32.81752465
		1	5	3	-6.5	27.43454762
		1	6	1	-7.0	26.98134165
		1	6	2	-7.0	25.18752981
		1	6	3	-7.0	22.15690758
		1	7	1	-7.5	31.49
		1	7	2	-7.5	21.40
		1	7	3	-7.5	29.35
		1	8	1	-8.5	32.93
		1	8	2	-8.5	32.74
		1	8	3	-8.5	25.63
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 1.32

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	0.794244482
Run ID:	060308	1	1	2	-7.0	0.07739337
Assay start date:	6/3/2008	1	1	3	-7.0	-0.571755137
Technician ID:	SMR	1	2	1	-8.0	8.069088517
		1	2	2	-8.0	7.314403596
		1	2	3	-8.0	8.053556743
		1	3	1	-8.5	22.11498956
		1	3	2	-8.5	22.29460058
		1	3	3	-8.5	26.57260872
		1	4	1	-9.0	48.90889287
		1	4	2	-9.0	47.09725081
		1	4	3	-9.0	48.20876828
		1	5	1	-9.5	77.58532685
		1	5	2	-9.5	78.11380542
		1	5	3	-9.5	78.36549981
		1	6	1	-10.0	105.4393733
		1	6	2	-10.0	104.8475729
		1	6	3	-10.0	102.6790983
		1	7	1	-11.0	112.61
		1	7	2	-11.0	111.91
		1	7	3	-11.0	114.66
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 4.58

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	
Run ID:	060308	1	1	2	-4.0	
Assay start date:	6/3/2008	1	1	3	-4.0	
Technician ID:	SMR	1	2	1	-4.5	5.166239764
		1	2	2	-4.5	5.532232082
		1	2	3	-4.5	6.758445734
		1	3	1	-5.5	26.83545413
		1	3	2	-5.5	25.64667603
		1	3	3	-5.5	21.918652
		1	4	1	-6.0	40.79772254
		1	4	2	-6.0	36.585824
		1	4	3	-6.0	41.19716791
		1	5	1	-6.5	68.37896732
		1	5	2	-6.5	63.44583692
		1	5	3	-6.5	60.99579912
		1	6	1	-7.0	90.78255583
		1	6	2	-7.0	93.03904383
		1	6	3	-7.0	93.75071768
		1	7	1	-7.5	99.79
		1	7	2	-7.5	93.90
		1	7	3	-7.5	104.58
		1	8	1	-8.5	107.92
		1	8	2	-8.5	98.80
		1	8	3	-8.5	87.11
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 4.28

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	2.303863409
Run ID:	060508	1	1	2	-7.0	1.11632605
Assay start date:	6/5/2008	1	1	3	-7.0	2.075240797
Technician ID:	SMR	1	2	1	-8.0	15.59070172
		1	2	2	-8.0	14.79323137
		1	2	3	-8.0	16.05047515
		1	3	1	-8.5	35.48050779
		1	3	2	-8.5	21.54789186
		1	3	3	-8.5	21.74906531
		1	4	1	-9.0	47.85646738
		1	4	2	-9.0	45.6005798
		1	4	3	-9.0	49.03136368
		1	5	1	-9.5	75.61081906
		1	5	2	-9.5	74.21235658
		1	5	3	-9.5	79.19401801
		1	6	1	-10.0	92.02938986
		1	6	2	-10.0	100.9640916
		1	6	3	-10.0	91.58153514
		1	7	1	-11.0	108.60
		1	7	2	-11.0	115.35
		1	7	3	-11.0	105.35
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 3.40

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	
Run ID:	060508	1	1	2	-4.0	
Assay start date:	6/5/2008	1	1	3	-4.0	
Technician ID:	SMR	1	2	1	-4.5	6.150718765
		1	2	2	-4.5	6.49166623
		1	2	3	-4.5	7.665479009
		1	3	1	-5.5	18.7401317
		1	3	2	-5.5	17.95385772
		1	3	3	-5.5	19.71854979
		1	4	1	-6.0	39.75390865
		1	4	2	-6.0	38.63174363
		1	4	3	-6.0	38.2189227
		1	5	1	-6.5	76.49424862
		1	5	2	-6.5	69.65326774
		1	5	3	-6.5	68.5758882
		1	6	1	-7.0	
		1	6	2	-7.0	90.48248521
		1	6	3	-7.0	92.60654458
		1	7	1	-7.5	93.70
		1	7	2	-7.5	96.28
		1	7	3	-7.5	94.69
		1	8	1	-8.5	84.18
		1	8	2	-8.5	95.72
		1	8	3	-8.5	100.34
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 1.86

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	-0.236378295
Run ID:	060608	1	1	2	-7.0	0.342116982
Assay start date:	6/6/2008	1	1	3	-7.0	0.254061557
Technician ID:	SMR	1	2	1	-8.0	7.5774581
		1	2	2	-8.0	7.633394948
		1	2	3	-8.0	7.709902121
		1	3	1	-8.5	21.54073899
		1	3	2	-8.5	22.11959515
		1	3	3	-8.5	20.53279307
		1	4	1	-9.0	47.08980426
		1	4	2	-9.0	47.11001371
		1	4	3	-9.0	46.90431046
		1	5	1	-9.5	74.85035991
		1	5	2	-9.5	78.37510312
		1	5	3	-9.5	71.74676703
		1	6	1	-10.0	101.6365317
		1	6	2	-10.0	102.1240845
		1	6	3	-10.0	98.46725818
		1	7	1	-11.0	112.68
		1	7	2	-11.0	111.84
		1	7	3	-11.0	107.27
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, the x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 3.60

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	
Run ID:	060608	1	1	2	-4.0	
Assay start date:	6/6/2008	1	1	3	-4.0	
Technician ID:	SMR	1	2	1	-4.5	10.29093657
		1	2	2	-4.5	11.2458327
		1	2	3	-4.5	10.33099457
		1	3	1	-5.5	27.26506343
		1	3	2	-5.5	22.16542727
		1	3	3	-5.5	23.48950661
		1	4	1	-6.0	41.46760968
		1	4	2	-6.0	38.31818467
		1	4	3	-6.0	37.84181925
		1	5	1	-6.5	72.4963208
		1	5	2	-6.5	60.09421931
		1	5	3	-6.5	75.00590044
		1	6	1	-7.0	93.2604398
		1	6	2	-7.0	96.99521686
		1	6	3	-7.0	91.61228763
		1	7	1	-7.5	107.79
		1	7	2	-7.5	112.80
		1	7	3	-7.5	105.58
		1	8	1	-8.5	115.32
		1	8	2	-8.5	115.64
		1	8	3	-8.5	110.77
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = 3.59

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Estradiol	1	1	1	-7.0	0.991812505
Run ID:	060708	1	1	2	-7.0	-1.033079935
Assay start date:	6/7/2008	1	1	3	-7.0	1.036983611
Technician ID:	JZ	1	2	1	-8.0	-2.596780955
		1	2	2	-8.0	-0.802763059
		1	2	3	-8.0	-3.373054784
		1	3	1	-8.5	7.176908084
		1	3	2	-8.5	5.285298292
		1	3	3	-8.5	6.353232476
		1	4	1	-9.0	11.14583111
		1	4	2	-9.0	9.472269495
		1	4	3	-9.0	10.70806174
		1	5	1	-9.5	54.57589815
		1	5	2	-9.5	50.0325771
		1	5	3	-9.5	45.50877444
		1	6	1	-10.0	69.05072827
		1	6	2	-10.0	54.04388289
		1	6	3	-10.0	58.51303409
		1	7	1	-11.0	87.70
		1	7	2	-11.0	85.80
		1	7	3	-11.0	82.98
		1	8	1		
		1	8	2		
		1	8	3		
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

SDwithin-run calculation for the ER Competitive Binding Assay

Data & results worksheet

Instruction:

This spreadsheet is used to estimate within-run standard deviation for data from a single run.

Within-run standard deviation (SDwithin-run) is a measure of variation of y at each concentration in a single run.

It is SD around a mean specific to each run-concentration combination.

How to use this spreadsheet:

1. Save the file under a new name defined by the naming convention, e.g., "lab A run 1 chem B YYYYMMDD SDw.xls".
   Use the lab and chemical code assigned by the study coordinator.
2. Enter the values of x and y from a single run (cut-and-paste-special, values-only) from the data entry Excel file).
   A template for data entry titled "ER-RUC data entry templates.xls" is provided.
   x: log10(concentration) in units of log10(M), from column T of the "compet-#unk-template" worksheet.
   y: % radioligand bound (%), from column U of the "compet-#unk-template" worksheet.
3. x values representing a triplicate have to be exactly the same.
4. Up to 30 (x, y) pairs can be input.
5. The first three columns (run, xgroup, replicate) are guides for data entry and are not used in the calculation.

The use of estimated SDwithin-run:

1. SDwithin-run is estimated separately for each run.
   SDwithin-run (estradiol) should be < 5.0%.
   SDwithin-run (norethynodrel) should be < 5.7%.
   SDwithin-run (R1881) should be < 10%.
2. These upper limits are a part of provisional performance criteria.
3. If a run does not satisfy **all** of the criteria, the entire run including the test chemicals shall be flagged as unacceptable by adding "UN" before the file name.

Result:
SDwithin-run = **5.50**

Provide information in all blue cells.

Laboratory Code: HAMNER

		run	xgroup	rep	x	y
Compound ID:	Norethynodrel	1	1	1	-4.0	
Run ID:	060708	1	1	2	-4.0	
Assay start date:	6/7/2008	1	1	3	-4.0	
Technician ID:	JZ	1	2	1	-4.5	24.25270167
		1	2	2	-4.5	24.55997673
		1	2	3	-4.5	22.3153631
		1	3	1	-5.5	43.84190485
		1	3	2	-5.5	44.32596065
		1	3	3	-5.5	60.88925736
		1	4	1	-6.0	64.21407387
		1	4	2	-6.0	50.12403465
		1	4	3	-6.0	58.39090481
		1	5	1	-6.5	83.75308692
		1	5	2	-6.5	94.81721967
		1	5	3	-6.5	84.01686388
		1	6	1	-7.0	99.36054071
		1	6	2	-7.0	96.04743524
		1	6	3	-7.0	96.50026164
		1	7	1	-7.5	89.43
		1	7	2	-7.5	76.52
		1	7	3	-7.5	87.48
		1	8	1	-8.5	83.31
		1	8	2	-8.5	80.82
		1	8	3	-8.5	85.30
		1	9	1		
		1	9	2		
		1	9	3		
		1	10	1		
		1	10	2		
		1	10	3		

Although all of the cells in columns x and y have been shaded blue, fill in only the cells for which there are data. For example, if there were only 6 concentrations tested, he x and y cells for xgroups 7, 8, 9, and 10 should be left blank.

APPENDIX D: Representative Runs for 23 Chemicals (Estradiol, Norethynodrel, and R1881) and Optional Chemicals (Estradiol and Norethynodrel)

Representative Runs of Competition Binding Data for Estradiol-23 Chemicals

Estradiol	EtOH/Hot Tube Ratio (>10%)	NSB/EtOH (around 0.25)	R1881/EtOH (close to 1.0)	Within Run SD (< 5.0%)	Log (IC_{50})	Bottom Plateau Level (-5.0 to 1)	Top Plateau Level (90 to 110)	Hill Slope (-1.1 to -0.7)
030508	2.12	0.26	0.91	7.99	-8.87	-3.1	114	-0.75
030608	1.48	0.32	0.9	8.42	-9.17	2.3	99	-1.24
031008	2.05	0.2	0.89	3.67	-9.09	0.0	109	-1.03
031108	1.83	0.11	0.84	7.13	-8.93	0.6	114	-0.98
031208	2.05	0.11	0.84	5.96	-9.05	-3.8	106	-0.74
031708	1.89	0.1	0.82	6.65	-9.03	-0.7	106	-1.00
031808	1.82	0.11	0.85	3.25	-9.11	-0.1	105	-0.99
032408	1.82	0.13	0.95	5.02	-9.03	-2.1	110	-0.85
032608	0.77	0.17	1.12	3.17	-8.81	-1.2	120	-1.00
040308	1.04	0.17		6.6	-8.61	-1.6	121	-1.03
040808	1.39	0.13		3.26	-9.12	2.4	94	-1.63
041008	1.6	0.12		4.49	-9.19	-1.7	101	-0.90
041508	0.89	0.19		4.12	-8.87	-0.5	98	-1.01
041608	0.55	0.32		7.61	-8.68	-3.3	114	-0.84
041708	0.81	0.31		4.28	-8.76	-1.3	108	-1.14
053008	1.27	0.17		3.34	-9.50	1.3	93	-1.05
060208	1.98	0.08		3.88	-8.92	-2.5	102	-0.83
060308	2.89	0.04		1.32	-9.02	-0.7	116	-0.96
060508	3.26	0.06		4.28	-9.00	-1.7	114	-0.77
060608	3.15	0.05		1.86	-9.06	-0.8	114	-0.96
AVG	1.73	0.16	0.90	4.82	-8.99	-0.93	107.80	-0.99
SE	1.70E-01	1.95E-02	3.05E-02	4.54E-01	4.43E-02	3.78E-01	1.83E+00	4.44E-02

Representative Runs of Competition Binding Data for Norethynodrel-23 Chemicals

Norethynodrel	Within Run SD (< 5.7%)	Log (IC_{50})	Relative Binding Affinity	Bottom Plateau Level (-5.0 to 1)	Top Plateau Level (90 to 110)	Hill Slope (-1.1 to -0.7)
030508	11.19	-6.07	1.58E-03	-1.7	104	-1.30
030608	9	-6.13	9.25E-04	-0.9	117	-0.79
031008	2.96	-6.10	1.04E-03	4.6	107	-1.20
031108	5.07	-6.22	1.93E-03	5.0	103	-1.12
031208	2.88	-6.24	1.55E-03	6.1	103	-1.02
031708	3.78	-6.14	1.28E-03	3.0	103	-0.85
031808	4.33	-6.23	1.32E-03	1.6	103	-1.07
032408	4.8	-6.19	1.44E-03	3.0	107	-0.94
032608	3.86	-5.79	9.51E-04	-2.4	117	-0.72
040308	3.75	-5.92	2.03E-03	2.6	124	-1.03
040808	3.06	-6.287	1.48E-03	-1.2	108	-0.97
041008	5.3	-6.239	1.12E-03	7.7	101	-1.26
041508	7.35	-6.043	1.49E-03	16.1	101	-1.11
041608	4.96	-5.834	1.42E-03	27.7	104	-1.34
041708	9.26	-5.766	1.01E-03	-2.9	96	-0.75
053008	2.39	-5.392	7.76E-05	-6.2	108	-0.97
060308	4.58	-6.173	1.42E-03	6.7	102	-1.03
060508	3.4	-6.154	1.42E-03	7.4	95	-1.35
060608	3.6	-6.178	1.33E-03	10.2	116	-0.99
AVG	5.03	-6.06	1.30E-03	4.55	106.08	-1.04
SE	5.59E-01	5.16E-02	9.59E-05	1.76E+00	1.70E+00	4.37E-02

Representative Runs of Competition Binding Data for R1881-23 Chemicals

R1881	Within Run SD (< 10%)	Hill Slope (-1.1 to -0.7)	Log (IC_{50})
030508	6.63	-1.30	-4.75
030608	11.38	-0.79	-4.84
031008	5.3	-1.20	-3.75
031108	6.17	-1.12	-3.94
031208	4.39	-1.02	-5.31
031708	7.11	-0.67	-5.25
031808	5.42	-0.71	-5.17
032408	3.79	-0.53	-4.89
032608	4.54	-1.15	-4.84
040208	7.27	-0.67	-4.99
AVG	6.20	-0.92	-4.77
SE	6.85E-01	8.53E-02	1.66E-01

Runs of Competition Binding Data for Estradiol-Optional Chemicals

Estradiol	EtOH/Hot Tube Ratio (>10%)	NSB/EtOH (around 0.25)	Within Run SD (< 5.0%)	Log (IC_{50})	Bottom Plateau Level (-5.0 to 1)	Top Plateau Level (90 to 110)	Hill Slope (-1.1 to -0.7)
061808	2.99	0.07	3.1	-9.08	-0.5	105	-0.98
061908	2.97	0.07	3.56	-9.06	-2.0	104	-0.81
062308	2.93	0.08	3.29	-8.97	-0.4	109	-0.96
062408	2.72	0.06	3.55	-8.98	-2.7	96	-0.83
062608	1.9	0.1	2.82	-8.81	-0.5	165	-0.90
062608-JZ	2.95	0.17	1.57	-9.79	0.7	84	-0.88
AVG	2.74	0.09	2.98	-9.12	-0.90	110.5	-0.89
SE	1.73E-01	1.66E-02	3.05E-01	1.40E-01	5.08E-01	1.14E+01	2.78E-02

Runs of Competition Binding Data for Norethynodrel-Optional Chemicals

Norethynodrel	Within Run SD (< 5.7%)	Log (IC_{50})	Relative Binding Affinity	Bottom Plateau Level (-5.0 to 1)	Top Plateau Level (90 to 110)	Hill Slope (-1.1 to -0.7)
061808	2.82	-6.13	1.11E-03	15.2	98	-1.06
061908	5.54	-6.10	1.09E-03	17.0	101	-1.06
062308	3.24	-6.02	1.12E-03	19.3	106	-1.12
062408	4.27	-5.99	1.03E-03	1.9	97	-0.72
062608	4.09	-5.73	8.40E-04	-2.3	162	-0.55
062608-JZ	2.77	-5.99	1.57E-04	15.9	87	-0.98
AVG	3.79	-5.99	8.91E-04	11.20	108.24	-0.91
SE	4.35E-01	5.76E-02	1.53E-04	3.68E+00	1.10E+01	9.34E-02

APPENDIX E: Calculation of Specific Activity Using the "QuickCalcs" Webpage from GraphPad-Example from Run 061808

1. Select category 2. Choose calculator 3. Choices and results

Radioactivity calculator

Radioactively labeled compounds are commonly used in biological and chemical research. Use these calculators to perform the radioactivity calculations commonly used in setting up and analyzing biochemical and pharmacological experiments. Note that this page has seven independent calculators, and that the results will appear right on this page. How do these calculations work?.

Isotope decay

Isotope: ○ ^{125}I ○ ^{32}P ○ ^{33}P ○ ^{35}S ◉ ^{3}H ○ Other
Half life (days): 4537
Number of days: 111

Percent Remaining = 98.31%

Concentration of stock

% remaining isotope: 98.31%
Original dilution: 1 mCi/ml
Original activity: 110 Ci/mmole

Stock Concentration = 8.937 micromolar
Assumes compound was 100% labeled originally (carrier free)

Dilution of stock

Concentration of stock solution (micromolar): 8.937
Dilute to this concentration in nM: 50
Final dilution volume in ml: 1.5

Stock volume needed = 8.392 microliter

Specific activity (cpm/fmol)

Specific radioactivity: Ci/mmole

Counter efficiency (%):

Specific Activity =

Cpm to fmol/mg

cpm/fmole:
cpm:
mg protein:

fmol/mg =

Cpm to sites/cell

cpm/fmol:
cpm:
cell count:

sites/cell =

Cpm to nM

cpm/fmol:
cpm:
microliters:

concentration =