Table 2. Variability in potency estimates for xenoestrogens.

Publication/construct or assay chemical	Concentration (nM/L except as noted)	Quantitative response	Relative potency
Chen et al. 1997: hER reporter in yeast/Miller units β-galactosidase enzyme activity			
Estradiol-17β (reference chemical)	1	0.4360	1.00E + 00
o,p´-DDT	50	0.3960	9.08E – 03
o,p´-DDT	1,000	0.6550	7.51E – 04
o,p´-DDE	1,000	0.6750	7.74E – 04
o,p´-DDD	1,000	0.5810	6.66E – 04
p,p´-DDT	1,000	0.4950	5.68E – 04
p,p´-DDE	1,000	0.0000	0.00E + 00
p,p´-DDA	1,000	0.0000	0.00E + 00
Chen et al. 1997: LexA-hER in CTY10-5d yeast/Miller units β-galactosidase			
Estradiol-17β (reference chemical)	1	0.9800	1.00E + 00
o,p´-DDT	1,000	0.1100	1.12E – 04
o,p´-DDE	1,000	0.1010	1.03E – 04
o,p´-DDD	1,000	0.1050	1.07E – 04
p,p´-DDT	1,000	0.0977	9.97E – 05
p,p´-DDE	1,000	0.0000	0.00E + 00
p,p´-DDA	1,000	0.0000	0.00E + 00
Tully et al. 2000: pERET81CAT in HeLa cells/CAT protein immunoassay			
Estradiol-17β (reference chemical)	0	0.0000	1.00E + 00
Estradiol-17β (reference chemical)	10	0.2200	1.00E + 00
Estradiol-17β (reference chemical)	100	0.4000	1.00E + 00
Estradiol-17β (reference chemical)	1,000	1.0000	1.00E + 00
p,p´-DDT	1	0.0000	0.00E + 00
p,p´-DDT	10	0.0000	0.00E + 00
p,p´-DDT	100	0.0000	0.00E + 00
p,p´-DDT	1,000	0.0000	0.00E + 00
p,p´-DDT	10,000	0.0000	0.00E + 00
p,p´-DDD	1	0.0000	0.00E + 00
p,p´-DDD	10	0.0000	0.00E + 00
p,p´-DDD	100	0.0000	0.00E + 00
p,p´-DDD	1,000	0.0000	0.00E + 00
p,p´-DDD	10,000	0.0000	0.00E + 00
p,p´-DDE	1	0.0000	0.00E + 00
p,p´-DDE	10	0.0000	0.00E + 00
p,p´-DDE	100	0.0000	0.00E + 00
p,p´-DDE	1,000	0.0000	0.00E + 00
p,p´-DDE	10,000	0.0000	0.00E + 00
p,p´-DDT + *p,p´*-DDD	2	0.0000	0.00E + 00
p,p´-DDT + *p,p´*-DDD	20	0.0000	0.00E + 00
p,p´-DDT + *p,p´*-DDD	200	0.0000	0.00E + 00
p,p´-DDT + *p,p´*-DDD	2,000	0.0000	0.00E + 00
p,p´-DDT + *p,p´*-DDD	20,000	0.0000	0.00E + 00
p,p´-DDT + *p,p´*-DDE	2	0.0000	0.00E + 00
p,p´-DDT + *p,p´*-DDE	20	0.0000	0.00E + 00
p,p´-DDT + *p,p´*-DDE	200	0.0000	0.00E + 00
p,p´-DDT + *p,p´*-DDE	2,000	0.0000	0.00E + 00
p,p´-DDT + *p,p´*-DDE	20,000	0.0000	0.00E + 00
p,p´-DDD + *p,p´*-DDE	2	0.0000	0.00E + 00
p,p´-DDD + *p,p´*-DDE	20	0.0000	0.00E + 00
p,p´-DDD + *p,p´*-DDE	200	0.0000	0.00E + 00
p,p´-DDD + *p,p´*-DDE	2,000	0.0000	0.00E + 00
p,p´-DDD + *p,p´*-DDE	20,000	0.0000	0.00E + 00
Fielden et al. 1997: Specific binding, mouse uterine cytosol			
Estradiol-17β (reference chemical)		IC_{50}	1.00E + 00
PCB-104	1,700	IC_{50}	9.09E – 03
OH-PCB-104	700	IC_{50}	2.22E – 01
PCB-155	5,600	IC_{50}	2.76E – 03
Fielden et al. 1997: Gal4-hER in MCF-7 cells/induction of luciferase			
Estradiol-17β (reference chemical)	50	69	1.00E + 00
PCB-104	10,000	31.00	2.25E – 03
OH-PCB-104	1,000	15.00	1.09E – 02
OH-PCB-104	10,000	9.00	6.52E – 04
PCB-155	10,000	0.00	0.00E + 00
Balaguer et al. 1999: MELN (hER-α)/luciferase activity per milligram protein			
Estradiol-17β (reference chemical)	0.1	1.00	1.00E + 00
o´,p-DDE	10,000	0.72	7.20E – 06
p,p´-DDE	10,000	0.40	4.00E – 06
2,3,7,8-TCDD	1,000	0.30	3.00E – 05

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Table 2. *Continued.*

Publication/construct or assay chemical	Concentration (nM/L except as noted)	Quantitative response	Relative potency
Balaguer et al. 1999: HELNα (hER-α)/luciferase activity per milligram protein			
Estradiol-17β (reference chemical)	0.1	1.00	1.00E + 00
o,p´-DDE	10,000	0.70	7.00E – 06
p,p´-DDE	10,000	0.42	4.20E – 06
2,3,7,8-TCDD	1,000	–0.10	–1.00E – 05
Balaguer et al. 1999: HELNβ (hER-β)/luciferase activity per milligram protein			
Estradiol-17β (reference chemical)	1	1.00	1.00E + 00
o´,p-DDE	10,000	0.40	4.00E – 05
p,p´-DDE	10,000	0.36	3.60E – 05
2,3,7,8-TCDD	1,000	0.00	0.00E + 00
Garner et al. 1999: pERET81CAT in HeLa cells/CAT protein immunoassay			
Estradiol-17β (reference chemical)	10	1.00	1.00E + 00
2,5-Dichloro-4´-biphenylol	10,000	0.20	2.03E – 04
2,4,6-Trichloro-4´-biphenyldiol	10,000	0.44	4.42E – 04
3,4-Biphenyldiol	50,000	0.42	8.32E – 05
2,5-Dichloro-3´,4´-biphenyldiol	10,000	0.19	1.86E – 04
2,5-Dichloro-2´,3´-biphenyldiol	10,000	0.06	5.62E – 05
2,4,6-Trichloro-3´,4´-biphenyldiol	10,000	0.36	3.57E – 04
Gierthy et al. 1997: Induction of MCF-7 cells resulting in cellular aggregation or multilayered nodules of cells (foci)			
Estradiol-17β (reference chemical)	1	1.00	1.00E + 00
2-Chlorobiphenyl	5,000	0.29	5.80E – 05
2-Chloro-4-biphenylol	5,000	0.21	4.20E – 05
4-Chlorobiphenyl	5,000	0.10	2.00E – 05
4-Chloro-4´-biphenylol	5,000	0.35	7.00E – 05
2,5-Dichlorobiphenyl	5,000	0.44	8.80E – 05
2,5-Dichloro-4-biphenylol	5,000	0.76	1.52E – 04
2,5-Dichloro-4-biphenylol	5,000	–0.13	–2.60E – 05
3,5-Dichlorobiphenyl	5,000	0.46	9.20E – 05
3,5-Dichloro-4´-biphenylol	5,000	0.44	8.80E – 05
3,5-Dichloro-4´-biphenylol	5,000	–0.13	–2.60E – 05
2,4,6-Trichlorobiphenyl	5,000	0.48	9.60E – 05
2,4,6-Trichloro-4´-biphenylol	5,000	0.98	1.96E – 04
3,4,5-Trichlorobiphenyl	5,000	0.2000	4.00E – 05
3,4,5-Trichlorobiphenyl	5,000	–0.4000	–8.00E – 05
3,4,5-Trichloro-4-biphenylol	5,000	1.0000	2.00E – 04
Korach et al. 1988: Specific binding, murine uterine cytosol			
Estradiol-17β (reference chemical)	N/D	N/D	1.00E + 00
4-Hydroxy-2´,3´,4´,5´-tretrachlorobiphenyl	N/D	N/D	2.38E – 02
4-Hydroxy-2´,4´,6´-trichlorobiphenyl	N/D	N/D	1.05E – 02
4,4´-Dihydroxy-2´-chlorobiphenyl	N/D	N/D	1.11E – 02
4-Hydroxy-2´6´-dichlorobiphenyl	N/D	N/D	2.58E – 03
4-Hydroxy-2´5´-dichlorobiphenyl	N/D	N/D	1.98E – 03
4-Hydroxy-3,5,4´-trichlorobiphenyl	N/D	N/D	1.00E – 03
4,4´-Dihydroxy-3,5,3´,5´-tetrachlorobiphenyl	N/D	N/D	7.39E – 04
4-Hydroxy-2-chlorobiphenyl	N/D	N/D	4.00E – 04
4-Hydroxy-4´-chlorobiphenyl	N/D	N/D	2.56E – 04
4,4´-Dihydroxy-2´,3´,5´,6´-tetrachlorobiphenyl	N/D	N/D	2.00E – 04
4,4´-Dihydroxybiphenyl	N/D	N/D	< 2.00E – 04
4-Hydroxybiphenyl	N/D	N/D	< 2.00E – 04
Bonefeld-Jorgensen et al. 2001: pERE-tk-CAT in MCF-7 cells/CAT protein immunoassay			
Estradiol-17β (reference chemical)	10	1.000000	1.00E + 00
PCB-138	9,000	–0.610000	–6.78E – 04
PCB-153	9,000	–0.500000	–5.56E – 04
PCB-180	9,000	–0.790000	–8.78E – 04
PCB-138 + E_2	9,000 + 10	–0.360000	–4.00E – 04
PCB-153 + E_2	9,000 + 10	–0.410000	–4.56E – 04
PCB-180 + E_2	9,000 + 10	–0.750000	–8.33E – 04
PCB-138 + PCB-153 + PCB-180	3,000 + 3,000 + 3,000	–0.420000	–4.67E – 04
PCB-138 + PCB-153 + PCB-180 = E_2	3,000 + 3,000 + 3,000 + 10	–0.270000	–3.00E – 04
Smeets et al. 1999: Vitellogenin induction in Carp hepatocyte cells			
Estradiol-17β (reference chemical)	2	LOEC	1.00E + 00
DES	6	LOEC	5.00E – 01
Methoxychlor	5,000	LOEC	1.00E – 03
o,p-DDT	25,000	LOEC	2.00E – 04
Chlordecone	20,000	LOEC	1.00E – 04
Bisphenol A	50,000	LOEC	1.00E – 04
4-*t*-Pentylphenol	50,000	LOEC	1.00E – 04
o,p-DDE	ND	LOEC	ND
Toxaphene	ND	LOEC	ND
β-Endosulfan	ND	LOEC	ND
Dieldrin	ND	LOEC	ND

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Table 2. *Continued.*

Publication/construct or assay chemical	Concentration (nM/L except as noted)	Quantitative response	Relative potency
Metcalfe et al. 2001: Yeast estrogen screen assay—effective concentration inducing 20% of maximum response observed with E_2			
Estradiol-17β (reference chemical)	0.022000	EC_{20} (ng/mL)	1.00E + 00
Ethinylestradiol-17α	0.059	EC_{20} (ng/mL)	3.80E − 01
Estrone	0.166	EC_{20} (ng/mL)	1.40E − 01
Estriol	0.627	EC_{20} (ng/mL)	3.70E − 02
Nonylphenol	246.7	EC_{20} (ng/mL)	8.90E − 05
Nonylphenol monoethoxylate	10,985.4	EC_{20} (ng/mL)	2.00E − 06
Nonylphenol monoethoxylate/nonylphenol diethoxylate	9,627.6	EC_{20} (ng/mL)	2.30E − 06
Nonylphenol monoethoxycarboxylate	0.0	EC_{20} (ng/mL)	0.00E + 00
Nonylphenol monoethoxycarboxylate/nonylphenol diethoxycarboxylate	0.0	EC_{20} (ng/mL)	0.00E + 00
Bisphenol A	597.3	EC_{20} (ng/mL)	3.70E − 05
Diethylhexyl phthalate	0.0	EC_{20} (ng/mL)	0.00E + 00
Madigou et al. 2001: Rainbow trout hepatocyte culture/induction of vitellogenin mRNA			
Estradiol-17β (reference chemical)	1,000	100	1.00E + 00
4-*n*-Nonylphenol	10,000	22	2.20E − 02
4-*n*-Nonylphenol diethoxylate	10,000	0	0.00E + 00
4-*n*-Nonylphenol diethoxylate	100,000	0	0.00E + 00
Nonylphenol glucuronide	1,000	0	0.00E + 00
Nonylphenol glucuronide	10,000	0	0.00E + 00
3-(4-Hydroxyphenol)-propionic acid	10,000	0	0.00E + 00
3-(4-Hydroxyphenol)-propionic acid	100,000	0	0.00E + 00
4-Hydroxybenzoic acid	10,000	0	0.00E + 00
4-Hydroxybenzoic acid	100,000	0	0.00E + 00
Madigou et al. 2001: 2ERE-CYC1-lacZ in yeast/Miller units β-galactosidase			
Estradiol-17β (reference chemical)	100	100	1.00E + 00
4-*n*-Nonylphenol	10,000	92	9.20E − 03
4-*n*-Nonylphenol diethoxylate	100,000	0	0.00E + 00
Nonylphenol glucuronide	100,000	0	0.00E + 00
3-(4-Hydroxyphenol)-propionic acid	100,000	0	0.00E + 00
4-Hydroxybenzoic acid	100,000	0	0.00E + 00
Andersen et al. 1999: Recombinant hER in MCF-7 cells/direct competitive binding			
Estradiol-17β (reference chemical)	1	IC_{50}	1.00E + 00
Ethynyl estradiol-17α (standard)	0.67	IC_{50}	2.20E + 00
DES	0.25	IC_{50}	5.80E + 00
Tamoxifen	2.6	IC_{50}	6.00E − 01
ICI 182.780	3.6	IC_{50}	4.00E − 01
Testosterone	> 200,000	IC_{50}	
Bisphenol A	11,000	IC_{50}	1.30E − 04
Bisphenol A dimethacrylate	> 0.00000002	IC_{50}	
4-*n*-OP	4,000	IC_{50}	3.60E − 04
4-*n*-NP	4,300	IC_{50}	3.40E − 04
NP12EO	57,000	IC_{50}	2.50E − 05
BBP	12,000	IC_{50}	1.20E − 04
DBP	> 200,000	IC_{50}	
Methoxychlor	> 200,000	IC_{50}	
o,p-DDT	5	IC_{50}	2.90E − 03
p, p´-DDE	16,000	IC_{50}	9.10E − 05
Endosulfan	13,000	IC_{50}	1.20E − 04
Chlormequat chloride	56,000	IC_{50}	2.60E − 05
Colchicine	> 200,000	IC_{50}	
Andersen et al. 1999: Rabbit uterine tissue/*In vitro* ER binding assay			
Estradiol-17β (reference chemical)	0.02	IC_{50}	1.00E + 00
Ethynyl estradiol-17α (standard)	0.002	IC_{50}	1.00E + 01
DES	0.000007	IC_{50}	2.86E + 03
Tamoxifen	120	IC_{50}	1.70E − 04
ICI 182.780	0.004	IC_{50}	5.00E + 00
Testosterone	> 10,000	IC_{50}	
Bisphenol A	1,600	IC_{50}	1.30E − 05
Bisphenol A dimethacrylate	4,300	IC_{50}	4.70E − 06
4-*n*-OP	> 10,000	IC_{50}	
4-*n*-NP	1,800	IC_{50}	1.10E − 05
NP12EO	> 10,000	IC_{50}	
BBP	> 10,000	IC_{50}	
DBP	> 10,000	IC_{50}	
Methoxychlor	6,500	IC_{50}	3.10E − 06
o,p-DDT	3,400	IC_{50}	5.90E − 06
p, p´-DDE	> 10,000	IC_{50}	
Endosulfan	> 10,000	IC_{50}	
Chlormequat chloride	> 10,000	IC_{50}	
Colchicine	> 10,000	IC_{50}	

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Table 2. *Continued.*

Publication/construct or assay chemical	Concentration (nM/L except as noted)	Quantitative response	Relative potency
Le Guevel and Pakdel 2001: Recombinant yeast expressing hER/β-galactosidase induction			
Ethynyl estradiol-17α (reference chemical)	1	EC_{50}	1.00E + 00
DES	2.9	EC_{50}	2.10E – 01
Estradiol-17β	0.74	EC_{50}	8.30E – 01
Estradiol-17α	5.2	EC_{50}	1.20E – 01
Estrone	2.1	EC_{50}	2.90E – 01
Zearalenone	130	EC_{50}	5.00E – 03
Zeralanone	110	EC_{50}	6.00E – 03
α-Zearalenol	30	EC_{50}	2.20E – 02
β-Zearalenol	280	EC_{50}	0.00E + 00
α-Zearalanol	4,000	EC_{50}	1.40E – 02
β-Zearalanol	160	EC_{50}	4.00E – 03
Le Guevel and Pakdel 2001: Rainbow trout ER in recombinant yeast/β-galactosidase units			
Ethynyl estradiol-17α (reference chemical)	3.6	EC_{50}	1.00E + 00
DES	4.3	EC_{50}	8.20E – 01
Estradiol-17β	5.2	EC_{50}	6.80E – 01
Estradiol-17α	140	EC_{50}	3.00E – 02
Estrone	22	EC_{50}	1.60E – 01
Zearalenone	62	EC_{50}	6.00E – 02
Zeralanone	32	EC_{50}	1.10E – 01
α-Zearalenol	12	EC_{50}	2.90E – 01
β-Zearalenol	> 50,000	EC_{50}	> 1.00E – 04
α-Zearalanol	30	EC_{50}	1.10E – 01
β-Zearalanol	110	EC_{50}	3.00E – 02
Behnisch et al. 2001: E-screen assay with calf MCF-7 cells			
Estradiol-17β (standard)	0.0062	EC_{50}	1.00E + 00
Ethynyl estradiol-17α (reference chemical)	0.0021	EC_{50}	3.00E + 00
Bisphenol A	110	EC_{50}	5.60E – 04
Butyl benzylpthalate	490	EC_{50}	1.30E – 05
Di-*n*-butylphthalate	1,700	EC_{50}	3.60E – 06
4-Octylphenol	320	EC_{50}	1.90E – 05
Nikov et al. 2000: Phytoestrogen binding to hER-α			
Estradiol-17β (reference chemical)	13 ± 0.7	IC_{50}	1.00E + 00
Genistein	825 ± 2	IC_{50}	1.60E – 02
Coumestrol	109 ± 1	IC_{50}	1.20E – 01
Zearalenone	59 ± 0.8	IC_{50}	2.20E – 01
Daidzein	7 ± 1	IC_{50}	2.00E – 03
Glyceolin	6 ± 0.6	IC_{50}	2.20E – 03
Testosterone	35 ± 0.5	IC_{50}	4.00E – 04
Nikov et al. 2000: Phytoestrogen binding to hER-β			
Estradiol-17β (reference chemical)	12 ± 0.5	IC_{50}	1.00E + 00
Genistein	12 ± 0.7	IC_{50}	1.00E + 00
Coumestrol	35 ± 0.7	IC_{50}	3.40E – 01
Zearalenone	16 ± 0.5	IC_{50}	7.50E – 01
Daidzein	670 ± 1	IC_{50}	1.80E – 02
Glyceolin	16 ± 1.4	IC_{50}	8.00E – 04
Testosterone	20 ± 1	IC_{50}	6.00E – 04
Harper et al. 1994: Progesterone receptor induction in MCF-7 human breast cancer cells			
Estradiol-17β (reference chemical)	1	283	1.00E + 00
TCDD	1	84	2.97E – 01
Eroschenko et al. 2000: Reproductive tract weight in ovariectomized adult mice; note concentrations in nanograms.			
Estradiol-17β (reference chemical)	25	1.6	1.00E + 00
Methoxychlor	125,000,000	1.1	1.38E – 07
Danzo 1997: Percent binding to rabbit uterine cytosol ERs using the charcoal assay procedure			
Estradiol-17β (reference chemical)			1.00E + 00
5α-Dihydrotestosterone			8.50E – 01
Hexachlorocyclohexane			1.15E + 00
Hexachlorocyclohexane			1.19E + 00
Methoxychlor			8.80E – 01
p, p´-DDE			9.00E – 01
DDE			9.20E – 01
o,p-DDT			4.00E – 01
Dieldrin			9.70E – 01
Atrazine			9.80E – 01
Pentachlorophenol			8.20E – 01
Nonylphenol			2.50E – 01

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Table 2. *Continued.*

Publication/construct or assay chemical	Concentration (nM/L except as noted)	Quantitative response	Relative potency
Matthews et al. 2000: Binding to human α-GST ERs			
Estradiol-17β (reference chemical)	0.29	IC_{50}	1.00E + 00
4-Hydroxytamoxifen	1.90	IC_{50}	1.55E + 00
Ethynyl estradiol	2.30	IC_{50}	1.27E + 00
DES	3.20	IC_{50}	9.10E – 01
α-Zearalanol	6.10	IC_{50}	4.80E – 01
Estrone	6.50	IC_{50}	4.50E – 01
ICI 164, 384	7.00	IC_{50}	4.20E – 01
Estriol	10.00	IC_{50}	2.80E – 01
β-Zearalanol	23.00	IC_{50}	1.30E – 01
Tamoxifen	28.00	IC_{50}	1.10E – 01
Estradiol benzoate	–9.00	IC_{50}	1.00E – 01
Zearalenone	31.00	IC_{50}	9.30E – 02
HPTE	250.00	IC_{50}	1.20E – 02
Coumestrol	360.00	IC_{50}	8.10E – 03
Genistein	630.00	IC_{50}	4.60E – 03
4-*t*-Octylphenol	2,400.00	IC_{50}	1.20E – 03
Dihydrotesterone	5,900.00	IC_{50}	4.90E – 04
Bisphenol A	36,000.00	IC_{50}	8.00E – 05
Kepone	42,000.00	IC_{50}	6.90E – 05
Matthews et al. 2000: Binding to mouse α-GST ERs			
Estradiol-17β (reference chemical)	2.70	IC_{50}	1.00E + 00
4-Hydroxytamoxifen	1.20	IC_{50}	2.12E + 00
Ethynyl estradiol	2.20	IC_{50}	1.18E + 00
DES	3.20	IC_{50}	8.40E – 01
α-Zearalanol	5.10	IC_{50}	5.30E – 01
Estrone	9.50	IC_{50}	2.80E – 01
ICI 164, 384	5.90	IC_{50}	4.50E – 01
Estriol	21.00	IC_{50}	1.30E – 01
β-Zearalanol	24.00	IC_{50}	1.10E – 01
Tamoxifen	26.00	IC_{50}	1.00E – 01
Estradiol benzoate	23.00	IC_{50}	1.20E – 01
Zearalenone	23.00	IC_{50}	1.20E – 01
HPTE	220.00	IC_{50}	1.20E – 02
Coumestrol	800.00	IC_{50}	3.30E – 03
Genistein	810.00	IC_{50}	3.30E – 03
4-*t*-Octylphenol	1,600.00	IC_{50}	1.70E – 03
Dihydrotesterone	6,600.00	IC_{50}	4.00E – 04
Bisphenol A	31,000.00	IC_{50}	8.60E – 05
Kepone	64,000.00	IC_{50}	3.50E – 05
o,p-DDT	36,000.00	IC_{50}	7.30E – 05
Matthews et al. 2000: Binding to chicken α-GST ERs			
Estradiol-17β (reference chemical)	3.20	IC_{50}	1.00E + 00
4-Hydroxytamoxifen	1.90	IC_{50}	1.68E + 00
Ethynyl estradiol	1.90	IC_{50}	1.71E + 00
DES	2.50	IC_{50}	1.30E + 00
α-Zearalanol	4.60	IC_{50}	7.00E – 01
Estrone	6.40	IC_{50}	5.00E – 01
ICI 164, 384	5.20	IC_{50}	6.20E – 01
Estriol	29.00	IC_{50}	1.10E – 01
β-Zearalanol	14.00	IC_{50}	2.30E – 01
Tamoxifen	21.00	IC_{50}	1.60E – 01
Estradiol benzoate	22.00	IC_{50}	1.50E – 01
Zearalenone	9.90	IC_{50}	3.30E – 01
HPTE	68.00	IC_{50}	4.80E – 02
Coumestrol	460.00	IC_{50}	7.00E – 03
Genistein	410.00	IC_{50}	7.80E – 03
4-*t*-Octylphenol	560.00	IC_{50}	5.70E – 03
Dihydrotesterone	38,000.00	IC_{50}	8.50E – 05
Bisphenol A	7,300.00	IC_{50}	4.40E – 04
Kepone	30,000.00	IC_{50}	1.10E – 03
o,p-DDT	37,000.00	IC_{50}	8.60E – 04
Quercitin	82,000.00	IC_{50}	3.90E – 05
Naringenin	39,000.00	IC_{50}	8.20E – 05
Matthews et al. 2000: Binding to green anole α-GST ERs			
Estradiol-17β (reference chemical)	3.10	IC_{50}	1.00E + 00
4-Hydroxytamoxifen	1.30	IC_{50}	2.43E + 00
Ethynyl estradiol	2.20	IC_{50}	1.39E + 00
Diethylstilbestrol	2.90	IC_{50}	1.07E + 00
α-Zearalanol	8.60	IC_{50}	3.60E – 01
Estrone	5.10	IC_{50}	6.00E – 01

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Table 2. *Continued.*

Publication/construct or assay chemical	Concentration (nM/L except as noted)	Quantitative response	Relative potency
ICI 164, 384	11.00	IC_{50}	2.80E – 01
Estriol	10.00	IC_{50}	3.00E – 01
β-Zearalanol	73.00	IC_{50}	4.20E – 02
Tamoxifen	30.00	IC_{50}	1.00E – 01
Estradiol benzoate	24.00	IC_{50}	1.30E – 01
Zearalenone	27.00	IC_{50}	1.20E – 01
HPTE	64.00	IC_{50}	4.80E – 02
Coumestrol	100.00	IC_{50}	3.10E – 02
Genistein	240.00	IC_{50}	1.30E – 02
4-*t*-Octylphenol	3,900.00	IC_{50}	7.90E – 04
Dihydrotesterone	820.00	IC_{50}	3.80E – 03
Bisphenol A	2,400.00	IC_{50}	1.30E – 03
Kepone	27,000.00	IC_{50}	1.10E – 04
Quercitin	19,000.00	IC_{50}	1.60E – 04
Naringenin	4,700.00	IC_{50}	6.50E – 04
Matthews et al. 2000: Binding to rainbow trout α-GST ERs			
Estradiol-17β (reference chemical)	3.30	IC_{50}	1.00E + 00
4-Hydroxytamoxifen	1.20	IC_{50}	2.72E + 00
Ethynyl estradiol	3.10	IC_{50}	1.08E + 00
DES	2.00	IC_{50}	1.65E + 00
α-Zearalanol	1.30	IC_{50}	2.67E + 00
Estrone	24.00	IC_{50}	1.40E – 01
ICI 164, 384	1.00	IC_{50}	3.27E + 00
Estriol	90.00	IC_{50}	3.70E – 02
β-Zearalanol	3.70	IC_{50}	9.10E – 01
Tamoxifen	13.00	IC_{50}	2.50E – 01
Estradiol benzoate	3.70	IC_{50}	9.00E – 02
Zearalenone	4.10	IC_{50}	8.20E – 01
HPTE	24.00	IC_{50}	1.40E – 01
Coumestrol	1,400.00	IC_{50}	2.40E – 03
Genistein	750.00	IC_{50}	4.40E – 03
4-*t*-Octylphenol	1.10	IC_{50}	3.20E – 02
Dihydrotesterone	10,000.00	IC_{50}	3.40E – 04
Bisphenol A	1,600.00	IC_{50}	2.10E – 03
Kepone	6,200.00	IC_{50}	5.40E – 04
Naringenin	8,700.00	IC_{50}	3.90E – 04
DHEA	12,000.00	IC_{50}	2.80E – 04
Quercitin	8,000.00	IC_{50}	4.20E – 04
o,p´-DDT	780.00	IC_{50}	4.30E – 03
o,p´-DDE	3,200.00	IC_{50}	1.10E – 03
p,p´-DDE	8,000.00	IC_{50}	4.20E – 04
Dibutylbenzylphthalate	1,700.00	IC_{50}	2.00E – 03
α-Endosulfan	28,000.00	IC_{50}	1.20E – 04
Methoxychlor	3,500.00	IC_{50}	9.50E – 03
Diel et al. 2000: Uterotrophic assay in ovariectomized 14-day-old DA/Han rats			
Ethynyl estradiol-17α (reference chemical)	0.10	1,300	1.00E + 00
o,p´-DDT	10	42	3.23E – 04
o,p´-DDT	100	446	3.43E – 04
o,p´-DDT	500	665	1.02E – 04
Lemini et al. 1997: Uterotrophic activity in immature CD1 mice measured as uterine weight (mg)			
Estradiol-17β (reference chemical)	1 μg/100 g	64 ± 4.4	1.00E + 00
p-Hydroxybenzoic acid (PHBA)	500 μg/100 g	63 ± 4.5	1.10E – 03
Lemini et al. 1997: Uterotrophic activity in ovariectomized CD1 mice measured as uterine weight (mg)			
Estradiol-17β (reference chemical)	1 μg/100 g	137 ± 11	1.00E + 00
p-Hydroxybenzoic acid (PHBA)	500 μg/100 g	92 ± 6.5	1.80E – 03
Katsuda et al. 2000: Uterotrophic assay in adult Crj:Donryu rats measured as uterine weight (g)—2-day treatment			
Estradiol-17β (reference chemical)	0.005	0.618	1.00E + 00
p-tert-Octylphenol	6.25	0.150	1.94E – 04
p-tert-Octylphenol	12.5	0.147	9.51E – 05
p-tert-Octylphenol	25	0.175	5.66E – 05
p-tert-Octylphenol	50	0.202	3.27E – 05
p-tert-Octylphenol	100	0.285	2.31E – 05
p-tert-Octylphenol	200	0.381	1.54E – 05

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Table 2. *Continued.*

Publication/construct or assay chemical	Concentration (nM/L except as noted)	Quantitative response	Relative potency
Katsuda et al. 2000: Uterotrophic assay in adult Crj:Donryu rats measured as uterine weight (g)—14 day treatment			
Estradiol-17β (reference chemical)	0.005	0.148	1.00E + 00
p-tert-Octylphenol	6.25	0.132	7.14E – 04
p-tert-Octylphenol	12.5	0.142	3.84E – 04
p-tert-Octylphenol	25	0.233	3.15E – 04
p-tert-Octylphenol	50	0.305	2.06E – 04
p-tert-Octylphenol	100	0.422	1.43E – 04
Santell et al. 1997: Uterotrophic assay in immature or adult ovariectomized Sprague-Dawley rats measured as uterine weight (mg)			
Estradiol-17β (reference chemical)	0.5 µg/kg	122.1	1.00E + 00
Estradiol-17β (standard)	1.0 µg/day	194.8	7.98E – 01
Estradiol-17β (standard)	1.5 µg/day	255	6.96E – 01
Genistein	150 µg/day	92.4	2.52E – 03
Genistein	375 µg/day	135.6	1.48E – 03
Genistein	750 µg/day	189.3	1.03E – 03
Petroff et al. 2000: Uterotrophic assay in immature Sprague-Dawley rats measured as uterine weight (mg)			
Estradiol cypionate (reference chemical)	2	41.9	1.00E + 00
TCDD	0.010	38.1	1.82E + 02
Cummings and Laws 2000: Percent implanting in female Holtzman rats			
Estrone (reference chemical)	0.001 mg/kg	100	1.00E + 00
Methoxychlor	6.25 mg/kg	10	1.60E – 05
Methoxychlor	12.5 mg/kg	8	6.40E – 06
Methoxychlor	25 mg/kg	37	1.48E – 05
Methoxychlor	50 mg/kg	68	1.36E – 04
Methoxychlor	100 mg/kg	57	5.70E – 06
Methoxychlor	200 mg/kg	70	3.50E – 06
Methoxychlor	300 mg/kg	100	3.33E – 06
Bisphenol A	25 mg/kg	30	1.20E – 05
Bisphenol A	50 mg/kg	50	1.00E – 05
Bisphenol A	100 mg/kg	78	7.80E – 06
Bisphenol A	200 mg/kg	100	5.00E – 06
4-*tert*-Octylphenol	200 mg/kg	25	1.25E – 06
4-*tert*-Octylphenol	300 mg/kg	22	7.33E – 07
4-*tert*-Octylphenol	400 mg/kg	75	1.88E – 06
Jansen et al. 1993: Uterotrophic assay in immature Sprague-Dawley rats measured as uterine weight (mg)			
Estradiol-17β (reference chemical)	1 µg/day	60	1.00E + 00
PCB-77	160 µg/day	25	2.60E – 03
PCB-52	640 µg/day	32	8.33E – 04
OH-PCB	250 µg/day	28	1.87E – 03
Aroclor 1242	80 µg/day	31	6.46E – 03
Aroclor 1242	320 µg/day	34	1.77E – 03
Fielden et al. 1997: Uterotrophic activity in ovariectomized CD1 mice measured as uterine weight (g)			
Ethynyl estradiol-17α (reference chemical)	0.10	1.1	2.39E + 00
Ethynyl estradiol-17α (reference chemical)	1.0	4.6	1.00E + 00
PCB-104	1.7	1.1	5.88E – 02
PCB-104	16	1.3	7.39E – 03
PCB-104	202	1.8	8.10E – 04
Carlson and Williams 2001: Plasma vitellogenin induction in rainbow trout			
Estradiol-17β (reference chemical)			1.00E + 00
Estrone			1.00E + 00
OH-PCB-30			1.00E – 01
OH-PCB-61			1.00E – 03
PCB-30			0.00E + 00
PCB-61			0.00E + 00
PCB-75			0.00E + 00
PCB-114			0.00E + 00

Abbreviations: CAT, choline acetyltransferase; GST, glutathione *S*-transferase; h, human; LOEC, lowest observable effect concentration; ND, no data; VTG, vitellogenin; YES, yeast estrogen screen. Data from tables or visually extracted from graphs in selected publications were used to calculate relative estrogenic potencies according to the following formula: $[R_T/CT \times C_{STD}]/R_{STD}$, where R denotes the measured response, and C denotes the concentration of either the estrogenic standard (STD) or test chemical (T). Negative values indicate anti-estrogenic potencies, i.e., the ability of a chemical to antagonize the response to the estrogenic standard. For the mixtures studied by Bonefield-Jorgensen et al. (2001), the mathematical sum of the component concentrations was assumed for CT, including the estrogenic standard, i.e., 9,000 nM PCB + 10 nM E_2 was assumed to be 9,010 nM.