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ANNEX 1

Definitions and Abbreviations

Acceptbility criteria: Minimum standards for the performance of experimental controls and reference standards. All acceptance criteria must be met for an experiment to be considered valid.

Accuracy: (a) The closeness of agreement between a test method result and an accepted reference value. (b) The proportion of correct outcomes of a test method. It is a measure of test method performance and one aspect of relevance. The term is often used interchangeably with "concordance" to mean the proportion of correct outcomes of a test method.

Agonist: A substance that produces a response, e.g., transcription, when it binds to a specific receptor.

BG-1: An immortalized adenocarcinoma cells that endogenously express estrogen receptor.

BG-1Luc4E2: The BG-1Luc4E2 cell line was derived from BG-1 immortalized human-derived adenocarcinoma cells that endogenously express both forms of the estrogen receptor (ERα and ERβ) and have been stably transfected with the plasmid pGudLuc7.ERE. This plasmid contains four copies of a synthetic oligonucleotide containing the estrogen response element upstream of the mouse mammary tumor viral (MMTV) promoter and the firefly luciferase gene.

Cytotoxicity: the harmful effects to cell structure or function ultimately causing cell death and can be a result of a reduction in the number of cells present in the well at the end of the exposure period or a reduction of the capacity for a measure of cellular function when compared to the concurrent vehicle control.

CV: Coefficient of variation

DMSO: Dimethyl sulfoxide

E2: 17β-estradiol

EC_{50}: The half maximal effective concentration of a test substance.

ER: Estrogen receptor

hERα: Human estrogen receptor alpha

hERß: Human estrogen receptor beta

ERE: Estrogen response element

Estrogenic activity: the capability of a chemical to mimic 17β-estradiol in its ability to bind to and activate estrogen receptors. hERα-mediated specific estrogenic activity can be detected in this PBTG.

HeLa: An immortal human cervical cell line

HeLa9903: A HeLa cell subclone into which hERα and a luciferase reporter gene have been stably transfected

hERα: Human estrogen receptor alpha

hERß: Human estrogen receptor beta

LEC: Lowest effective concentration is the lowest concentration of test substance that produces a threshold response (*i.e.* the lowest test substance concentration at which the fold induction is statistically different from the concurrent vehicle control).

Interlaboratory reproducibility: A measure of the extent to which different qualified laboratories using the same protocol and testing the same substances can produce qualitatively and quantitatively similar results. Interlaboratory reproducibility is determined during the prevalidation and validation processes, and indicates the extent to which a test method can be transferred successfully among laboratories.

Intralaboratory reproducibility: The closeness of agreement between test results obtained within a single laboratory when the procedure is performed on the same substance under identical conditions within a given time period.

Me-too test: A colloquial expression for a test methods that is structurally and functionally similar to a validated and accepted reference test method. Such a test method would be a candidate for catch-up validation. Interchangeably used with similar test method.

PBTG: Performance-Based Test Guideline.

PC: Positive control (1 nM of E2)

PC_{10}: the concentration of a test chemical at which the measured activity in an agonist assay is 10% of the maximum activity induced by the PC (E2 at 1nM for the STTA assay) in each plate.

PC_{50}: the concentration of a test chemical at which the measured activity in an agonist assay is 50% of the maximum activity induced by the PC (E2 at the reference concentration specified in the test method) in each plate.

PC_{Max}: the concentration of a test chemical inducing the RPCMax

Performance standards: Standards, based on a validated test method, that provide a basis for evaluating the comparability of a proposed test method that is mechanistically and functionally similar. Included are (1) essential test method components; (2) a minimum list of reference substances selected from among the chemicals used to demonstrate the acceptable performance of the validated test method; and (3) the comparable levels of accuracy and reliability, based on what was obtained for the validated test method, that the proposed test method should demonstrate when evaluated using the minimum list of reference chemicals.

Proficiency chemicals (substances): A subset of the Reference Chemicals included in the Performance Standards that can be used by laboratories to demonstrate technical competence with a standardized test method. Selection criteria for these substances typically include that they represent the range of responses, are commercially available, and have high quality reference data available.

Proficiency: The demonstrated ability to properly conduct a test method prior to testing unknown substances.

Reference chemicals (substances): A set of chemicals to be used to demonstrate the ability of a new test method to meet the acceptability criteria demonstrated by the validated reference test method(s). These chemicals should be representative of the classes of chemicals for which the test methods is expected to be used, and should represent the full range of responses that may be expected from the chemicals for which it may be used, from strong, to weak, to negative.

Reference estrogen (Positive control, PC): The reference estrogen, 17ß-estradiol (E2, CAS 50-28-2).

Reference standard: a reference substance used to demonstrate the adequacy of a test method. 17β-estradiol is the estrogenic reference standard for the STTA and BG1Luc ER TAs.

Reference test method: The test methods upon which this PBTG is based.

Relevance: Description of relationship of the test to the effect of interest and whether it is meaningful and useful for a particular purpose. It is the extent to which the test correctly measures or predicts the biological effect of interest. Relevance incorporates consideration of the accuracy (concordance) of a test method.

Reliability: Measures of the extent that a test method can be performed reproducibly within and between laboratories over time, when performed using the same protocol. It is assessed by calculating intra- and inter-laboratory reproducibility.

RPCMax: maximum level of response induced by a test chemical, expressed as a percentage of the response induced by 1 nM E2 on the same plate

SD: Standard deviation.

Sensitivity: The proportion of all positive/active substances that are correctly classified by the test. It is a measure of accuracy for a test method that produces categorical results, and is an important consideration in assessing the relevance of a test method.

Specificity: The proportion of all negative/inactive substances that are correctly classified by the test. It is a measure of accuracy for a test method that produces categorical results, and is an important consideration in assessing the relevance of attest method.

Stable transfection: When DNA is transfected into cultured cells in such a way that it is stably integrated into the cells genome, resulting in the stable expression of transfected genes. Clones of stably transfected cells are selected by stable markers (e.g., resistance to G418).

STTA: Stably Transfected Transcriptional Activation Assay, the ERα transcriptional activation assay using the HeLA 9903 Cell Line.

Substance: Used in the context of the UN GHS (1) as chemical elements and their compounds in the natural state or obtained by any production process, including any additive necessary to preserve the stability of the product and any impurities deriving from the process used, but excluding any solvent which may be separated without affecting the stability of the substance or changing its composition.

TA: Transactivation.

Transcription: mRNA synthesis

Transcriptional activation: The initiation of mRNA synthesis in response to a specific chemical signal, such as a binding of an estrogen to the estrogen receptor.

Validated (reference) test method: An accepted test method for which validation studies have been completed to determine the accuracy and reliability of the method for a specific proposed use.

Validation, a process based on scientifically sound principles by which the reliability and relevance of a particular test, approach, method, or process are established for a specific purpose. Reliability is defined as the extent of reproducibility of results from a test within and among laboratories over time, when performed using the same standardised protocol. The relevance of a test method describes the relationship between the test and the effect in the target species and whether the test method is meaningful and useful for a defined purpose, with the limitations identified. In brief, it is the extent to which the test method correctly measures or predicts the (biological) effect of interest, as appropriate (16).

VC (Vehicle control): The solvent that is used to dissolve test and control chemicals is tested solely as vehicle without dissolved chemical.

Weak positive control: A weakly active substance selected from the reference chemicals list that is included in all tests to help ensure proper functioning of the assay.

22 December 2011

ANNEX 2

Supplementary Information

for the

Stably Transfected Human Estrogen Receptor-α Transcriptional Activation Assay for Detection of Estrogenic Agonist-Activity of Chemicals using the hERα-HeLa-9903 cell line

And

BG1Luc Estrogen Receptor Transcriptional Activation Test Method for Identifying Estrogen Receptor Agonists and Antagonists

Table 1. Comparison of Results from STTA and BG1Luc ER TA Assays for Chemicals Tested in Both Assays and Classified as ER Agonists or Negatives.

Chemical	CASRN	STTA ER TA[1]			BG1Luc ER TA[2]		Data Source For Classification[4]			Chemical Class[5]	Product Class[6]
		ER TA Activity	PC_{10} Value (M)	PC_{50} Value[b] (M)	ER TA Activity	EC_{50} Value[b,3] (M)	Other ER TAs[c]	ER Binding	Uterotrophic		
17-ß Estradiol[a]	50-28-2	POS	$<1.00 \times 10^{-11}$	$<1.00 \times 10^{-11}$	POS	5.63×10^{-12}	POS (227/227)	POS	POS	Steroid	Pharmaceutical, Veterinary Agent
17-α Estradiol[a]	57-91-0	POS	7.24×10^{-11}	6.44×10^{-10}	POS	1.40×10^{-9}	POS(11/11)	POS	POS	Steroid	Pharmaceutical, Veterinary Agent
17-α Ethinyl estradiol[a]	57-63-6	POS	$<1.00 \times 10^{-11}$	$<1.00 \times 10^{-11}$	POS	4.20×10^{-8}	POS(22/22)	POS	POS	Steroid	Pharmaceutical, Veterinary Agent
17-β-Trenbolone	10161-33-8	POS	1.78×10^{-8}	2.73×10^{-7}	POS	7.31×10^{-12}	POS (2/2)	NT	NT	Steroid	Veterinary Agent
19-Nortestosterone[a]	434-22-0	POS	9.64×10^{-9}	2.71×10^{-7}	POS	1.80×10^{-6}	POS(4/4)	POS	POS	Steroid	Pharmaceutical, Veterinary Agent
4-Cumylphenol[a]	599-64-4	POS	1.49×10^{-7}	1.60×10^{-6}	POS	3.20×10^{-7}	POS(5/5)	POS	NT	Phenol	Chemical Intermediate
4-*tert*-Octylphenol[a]	140-66-9	POS	1.85×10^{-9}	7.37×10^{-8}	POS	3.19×10^{-8}	POS(21/24)	POS	POS	Phenol	Chemical Intermediate
Apigenin[a]	520-36-5	POS	1.31×10^{-7}	5.71×10^{-7}	POS	1.60×10^{-6}	POS(26/26)	POS	NT	Heterocyclic Compound	Dye, Natural Product, Pharmaceutical Intermediate
Atrazine[a]	1912-24-9	NEG	-	-	NEG	-	NEG (30/30)	NEG	NT	Heterocyclic Compound	Herbicide
Bisphenol A[a]	80-05-7	POS	2.02×10^{-8}	2.94×10^{-7}	POS	5.33×10^{-7}	POS(65/65)	POS	POS	Phenol	Chemical Intermediate
Bisphenol B[a]	77-40-7	POS	2.36×10^{-8}	2.11×10^{-7}	POS	1.95×10^{-7}	POS(6/6)	POS	POS	Phenol	Chemical Intermediate
Butylbenzyl phthalate[a]	85-68-7	POS	1.14×10^{-6}	4.11×10^{-6}	POS	1.98×10^{-6}	POS(12/14)	POS	NEG	Carboxylic Acid, Ester, Phthalic Acid	Plasticizer, Industrial Chemical

Chemical	CASRN	STTA ER TA[1]			BG1Luc ER TA[2]		Data Source For Classification[4]			Chemical Class[5]	Product Class[6]
		ER TA Activity	PC_{10} Value (M)	PC_{50} Value[b] (M)	ER TA Activity	EC_{50} Value[b,3] (M)	Other ER TAs[c]	ER Binding	Uterotrophic		
Corticosterone[a]	50-22-6	NEG	-	-	NEG	-	NEG(6/6)	NEG	NT	Steroid	Natural Hormone, Pharmaceutical
Coumestrol[a]	479-13-0	POS	1.23×10^{-9}	2.00×10^{-8}	POS	1.32×10^{-7}	POS(30/30)	POS	NT	Heterocyclic Compound	Natural Product
Daidzein[a]	486-66-8	POS	1.76×10^{-8}	1.51×10^{-7}	POS	7.95×10^{-7}	POS(39/39)	POS	POS	Flavonoid, Heterocyclic Compound	Natural Product
Diethylstilbestrol[a]	56-53-1	POS	$<1.00 \times 10^{-11}$	2.04×10^{-11}	POS	3.34×10^{-11}	POS(42/42)	POS	NT	Hydrocarbon (Cyclic)	Pharmaceutical, Veterinary Agent
Di-n-butyl phthalate	84-74-2	POS	4.09×10^{-6}		POS	4.09×10^{-6}	POS(6/11)	POS	NEG		Plasticizer, Chemical Intermediate
Ethyl paraben	120-47-8	POS	5.00×10^{-6}	(no PC_{50})	POS	2.48×10^{-5}	POS ( )		NT	Carboxylic Acid, Phenol	Pharmaceutical, Preservative
Estrone[a]	53-16-7	POS	3.02×10^{-11}	5.88×10^{-10}	POS	2.34×10^{-10}	POS(26/28)	POS	POS	Steroid	Pharmaceutical, Veterinary Agent
Genistein[a]	446-72-0	POS	2.24×10^{-9}	2.45×10^{-8}	POS	2.71×10^{-7}	POS(100/102)	POS	POS	Flavonoid, Heterocyclic Compound	Natural Product, Pharmaceutical
Haloperidol	52-86-8	NEG	-	-	NEG	-	NEG (2/2)	NEG	NT	Butyrophenone	Pharmaceutical
Kaempferol[a]	520-18-3	POS	1.36×10^{-7}	1.21×10^{-6}	POS	3.99×10^{-6}	POS(23/23)	POS	NT	Flavonoid, Heterocyclic Compound	Natural Product
Kepone[a]	143-50-0	POS	7.11×10^{-7}	7.68×10^{-6}	POS	4.91×10^{-7}	POS(14/18)	POS	NT	Hydrocarbon, (Halogenated)	Pesticide
Ketoconazole	65277-42-1	NEG	-	-	NEG	-	NEG (2/2)	NEG	NT		Pharmaceutical
Linuron[a]	330-55-2	NEG	-	-	NEG	-	NEG (8/8)	NEG	NT	Phenylurea	Herbicide
meso-Hexestrol[a]	84-16-2	POS	$<1.00 \times 10^{-11}$	2.75×10^{-11}	POS	1.65×10^{-11}	POS(4/4)	POS	NT	Steroid	Pharmaceutical, Veterinary Agent

Chemical	CASRN	STTA ER TA[1]			BG1Luc ER TA[2]		Data Source For Classification[4]			Chemical Class[5]	Product Class[6]
		ER TA Activity	PC_{10} Value (M)	PC_{50} Value[b] (M)	ER TA Activity	EC_{50} Value[b,3] (M)	Other ER TAs[c]	ER Binding	Uterotrophic		
Methyl testosterone[a]	58-18-4	POS	1.73×10^{-7}	4.11×10^{-6}	POS	2.68×10^{-6}	POS(5/6)	POS	NT	Steroid	Pharmaceutical, Veterinary Agent
Morin	480-16-0	POS	5.43×10^{-7}	4.16×10^{-6}	POS	2.37×10^{-6}	POS(2/2)	POS	NT	Flavonoid, Phenol	Natural product
Norethynodrel[a]	68-23-5	POS	1.11×10^{-11}	1.50×10^{-9}	POS	9.39×10^{-10}	POS(5/5)	POS	NT	Steroid	Pharmaceutical, Veterinary Agent
p,p'-Methoxychlor[a]	72-43-5	POS	1.23×10^{-6}	(no PC_{50})[b]	POS	1.92×10^{-6}	POS(24/27)	POS	POS	Hydrocarbon (Halogenated)	Pesticide, Veterinary Agent
Phenobarbital[a]	57-30-7	NEG	-	-	NEG	-	NEG(2/2)	NEG	NT		Pharmaceutical, Analgesic
Reserpine	50-55-5	NEG	-	-	NEG	-	NEG(4/4)	NEG	NT	Heterocyclic Compound, Indole	Pharmaceutical, Veterinary Agent
Spironolactone[a]	52-01-7	NEG	-	-	NEG	-	NEG(4/4)	NEG	NT	Lactone, Steroid	Pharmaceutical
Testosterone	58-22-0	POS	2.82×10^{-8}	9.78×10^{-6}	POS	1.75×10^{-5}	POS(5/10)	POS	NT	Steroid	Natural Hormone

Abbreviations: CASRN = Chemical Abstracts Service Registry Number; M = molar; EC_{50} = half maximal effective concentration of test chemical; NEG = negative; POS = positive; PC_{10} (and PC_{50}) = the concentration of a test chemical at which the response is 10% (or 50 % for PC_{50}) of the response induced by the positive control (E2, 1nM) in each plate.

[a]Common chemicals tested in the STTA ER TA and BG1Luc ER TA that were designated as definitive ER Agonists or negatives and used to evaluate accuracy in the BG1 Luc ER TA validation study (ICCVAM BG1Luc ER TA Evaluation Report, Table 4-1 [6].

[b]Maximum concentration tested in the absence of limitations due to cytotoxicity or insolubility was 1×10^{-5} M (STTA ER TA) and 1×10^{-3} M (BG1Luc ER TA).

[c]Number in parenthesis represents the test results classified as positive (POS) or negative (NEG) over the total number of referenced studies.

[1]Values reported in Draft Report of Pre-validation and Inter-laboratory Validation For Stably Transfected Transcriptional Activation (TA) Assay to Detect Estrogenic Activity - The Human Estrogen Receptor Alpha Mediated Reporter Gene Assay Using hER-HeLa-9903 Cell Line [9].

[2]ICCVAM Test Method Evaluation Report on the LUMI-CELL® ER (BG1Luc ER TA) Test Method: An *In Vitro* Method for Identifying ER Agonists and Antagonists [6].

[3]Mean EC_{50} values were calculated with values reported by the laboratories of the BG1Luc ER TA validation study (XDS, ECVAM, and Hiyoshi) [6].

[4]Classification as an ER agonist or negative was based upon information in the ICCVAM Background Review Documents (BRD) for ER Binding and TA test methods (31) as well as information obtained from publications published and reviewed after the completion of the ICCVAM BRDs [6, 9, 10, 11, 12, 13, 14, 15].

[5]Substances were assigned into one or more chemical classes using the U.S. National Library of Medicine's Medical Subject Headings (MeSH), an internationally recognized standardized classification scheme (available at: http://www.nlm.nih.gov/mesh).

[6]Substances were assigned into one or more product classes using the U.S. National Library of Medicine's Hazardous Substances Database (available at: http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB)

Table 2: Chemicals tested in the STTA ER TA Validation Study [9].

Chemical name	CASRN	STTA ER TA Classification[2]			
		PC_{10} (M)	PC_{50} (M)	PC_{10}	PC_{50}
17β-Estradiol	50-28-2	$<1.00 \times 10^{-11}$	<1.00 × 10-11	P	P
17β-Trenbolone	10161-33-8	1.78E-08	2.73E-07	P	P
17α-Estradiol	57-91-0	7.24E-11	6.44E-10	P	P
17α-Ethinyl estradiol	57-63-6	$<1.00 \times 10^{-11}$	<1.00 × 10-11	P	P
2-sec-Butylphenol	89-72-5	-	-	N	N
4-Cumylphenol	599-64-4	1.49E-07	1.60E-06	P	P
4-tert-Octylphenol	140-66-9	1.85E-09	7.37E-08	P	P
Apigenin	520-36-5	1.31E-07	5.71E-07	P	P
Bisphenol A	80-05-7	2.02E-08	2.94E-07	P	P
Bisphenol B	77-40-7	2.36E-08	2.11E-07	P	P
Butylbenzyl phthalate	85-68-7	1.14E-06	4.11E-06	P	P
Coumestrol	479-13-0	1.23E-09	2.00E-08	P	P
Daidzein	486-66-8	1.76E-08	1.51E-07	P	P
Di-n-butyl phthalate	84-74-2	-	-	N	N
Diethylstilbestrol	56-53-1	$<1.00 \times 10^{-11}$	2.04E-11	P	P
Estrone	53-16-7	3.02E-11	5.88E-10	P	P
Ethyl paraben	120-47-8	5.00E-06	(no PC50)	P	N
Flavone	525-82-6	2.26×10^{-6}	-	P	N
Genistein	446-72-0	2.24E-09	2.45E-08	P	P
Kaempferol	520-18-3	1.36E-07	1.21E-06	P	P
Kepone (Chlordecone)	143-50-0	7.11E-07	7.68E-06	P	P
meso-Hexestrol	84-16-2	$<1.00 \times 10^{-11}$	2.75×10^{-11}	P	P
Methyl testosterone	58-18-4	1.73E-07	4.11E-06	P	P
Morin	480-16-0	5.43E-07	4.16E-06	P	P
Norethynodrel	68-23-5	1.11E-10	1.50E-09	P	P
p-n-Nonylphenol	104-40-5	-	-	N	N
p,p'-Methoxychlor	72-43-5	1.23E-06	(no PC50)	P	N
Phenolphthalin	81-90-3	-	-	N	N
Progesterone	57-83-0	-	-	N	N
Testosterone	58-22-0	2.82E-08	9.78E-06	P	P
2,4,5-Trichloro-phenoxyacetic acid	93-76-5	-	-	N	N
Atrazine	1912-24-9	-	-	N	N
Corticosterone	50-22-6	-	-	N	N
Cyproterone acetate	427-51-0	-	-	N	N
Haloperidol	52-86-8	-	-	N	N
` Ketoconazole	65277-42-1	-	-	N	N
L-Thyroxine	51-48-9	1.32E-06	(no PC50)	P	N

Chemical name	CASRN	STTA ER TA Classification[2]			
		PC_{10} (M)	PC_{50} (M)	PC_{10}	PC_{50}
Mifepristone	84371-65-3	-	-	N	N
Phenobarbital (Na salt)	57-30-7	-	-	N	N
Reserpine	50-55-5	-	-	N	N
Spironolactone	52-01-7	-	-	N	N
Vinclozolin	50471-44-8	1.33E-07	7.65E-06	P	P
Zearalenone	17924-92-4	2.44E-11	6.44E-10	P	P
Tamoxifen	10540-29-1	1.49E-07	(no PC50)	P	N
Diethylhexyl phthalate	117-81-7	-	-	N	N
4-Androstenedione	63-05-8	2.56E-07	(no PC50)	P	N
Flutamide	13311-84-7	-	-	N	N
Procymidone	32809-16-8	-	-	N	N
Clomiphene citrate	50-41-9	3.68E-08	(no PC50)	P	N

Abbreviations: Abbreviations: CASRN = Chemical Abstracts Service Registry Number; EC_{50} – half maximal effective concentration; NEG = negative; PC_{10} (and PC_{50}) = the concentration of a test chemical at which the response is 10% (or 50% for PC_{50}) of that induced by the positive controls (E2, 1nM),; POS = positive.

[j]The classification for this substance is "presumed positive" for ER agonism since the substance was positive in 50% or less of reported studies,or was reported positive in the single study conducted.

[1]ICCCVAM, 2003. Evaluation of in vitro test methods for detecting potential endocrine disruptors: estrogen receptor and androgen receptor binding and transcriptional activation assays. NIH Publication No. 03-4503. Available at: [http://iccvam.niehs.nih.gov/methods/endodocs/edfinrpt/edfinrpt.pdf], Addendum, 2006: [10].

[2]Takeyoshi, M, Draft Report of Pre-validation and Inter-laboratory validation for stably transfected activation (TA) assay to detect estrogenic activity; The human estrogen receptor alpha mediated reporter gene assay using hER-HeLA-9902 cell line. 2006 [9].

Chemicals Evaluation and Research Institute (CERI): Japan, p. 1-188.

Table 3. Chemicals Tested during the BG1Luc ER TA Validation Study [6].

Substance	CASRN	BG1Luc ER TA Classification[1]
17ß-Estradiol	50-28-2	POS
17ß-Trenbolone	10161-33-8	POS
17α-Estradiol	57-91-0	POS
17α-Ethinyl estradiol	57-63-6	POS
19-Nortestosterone	434-22-0	POS
2-sec-Butylphenol	89-72-5	POS
4-Cumylphenol	599-64-4	POS
4-Hydroxy-androstenedione	566-48-3	POS
4-tert-Octylphenol	140-66-9	POS
Apigenin	520-36-5	POS
Bisphenol A	80-05-7	POS
Bisphenol B	77-40-7	POS
Butylbenzyl phthalate	85-68-7	POS
Chrysin	480-40-0	POS
Coumestrol	479-13-0	POS
Daidzein	486-66-8	POS
Di-*n*-butyl phthalate	84-74-2	POS
Dicofol	115-32-2	POS
Diethylstilbestrol	56-53-1	POS
Estrone	53-16-7	POS
Ethyl paraben	120-47-8	POS
Fenarimol	60168-88-9	POS
Flavone	525-82-6	POS
Fluoranthene	206-44-0	POS
Fluoxymestrone	76-43-7	POS
Genistein	446-72-0	POS
Kaempferol	520-18-3	POS
Kepone	143-50-0	POS
meso-Hexestrol	84-16-2	POS
Methyl testosterone	58-18-4	POS
Morin	480-16-0	POS
Nilutamide	63612-50-0	POS
Norethynodrel	68-23-5	POS
o,p'-DDT	789-02-6	POS
p-*n*-Nonylphenol	104-40-5	POS
p,p'- Methoxychlor	72-43-5	POS
Phenolphthalin	81-90-3	POS
Progesterone	57-83-0	POS
Testosterone	58-22-0	POS

Substance	CASRN	BG1Luc ER TA Classification[1]
12-*O*-Tetradecanoylphorbol-13-acetate	16561-29-8	NEG
2,4,5-Trichloro-phenoxyacetic acid	93-76-5	NEG
4-Hydroxytamoxifen	68047-06-3	NEG
Actinomycin D	50-76-0	NEG
Ammonium perchlorate	7790-98-9	NEG
Apomorphine	58-00-4	NEG
Atrazine	1912-24-9	NEG
Bicalutamide	90357-06-5	NEG
Corticosterone	50-22-6	NEG
Cyproterone acetate	427-51-0	NEG
Dibenzo[*a*,*h*] Anthracene	53-70-3	NEG
Finasteride	98319-26-7	NEG
Haloperidol	52-86-8	NEG
Hydroxy flutamide	52806-53-8	NEG
Ketoconazole	65277-42-1	NEG
L-Thyroxine	51-48-9	NEG
Linuron	330-55-2	NEG
Medroxyprogest-erone acetate	71-58-9	NEG
Mifepristone	84371-65-3	NEG
Phenobarbital	50-06-6	NEG
Pimozide	2062-78-4	NEG
Propylthiouracil	51-52-5	NEG
Raloxifene HCl	82640-04-8	NEG
Reserpine	50-55-5	NEG
Sodium azide	26628-22-8	NEG
Spironolactone	52-01-7	NEG
Vinclozolin	50471-44-8	NEG

Table is sorted by classification and then alphabetically by substance name.

[1]ICCVAM Test Method Evaluation Report on the LUMI-CELL® ER (BG1Luc ER TA) Test Method An In Vitro Method for Identifying ER Agonists and Antagonists [6].

Table 4. Summary of the Reliability and Accuracy Values Obtained for the STTA and BG1Luc TAs: Validation Studies.

Place holder: Data to be added for Intra- and Intra-laboratory reproducibility, Sensitivity, Specificity, Positive and Negative predictivity, and Overall Accuracy values from respective validation studies.

添付資料3

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Organisation de Coopération et de Développement Économiques
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