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**DETAILED REVIEW PAPER ON
TRANSGENIC RODENT MUTATION ASSAYS**

Prepared by

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FOREWORD

This document presents a Detailed Review Paper on Transgenic Rodent Mutation Assays....

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LIST OF ACRONYMS AND ABBREVIATIONS

³ H-TdR	tritium-labelled thymidine
6-TG	6-thioguanine
8-AA	8-azaadenine
8-OHdG	8-hydroxy-2'-deoxyguanosine
AMP	adenosine monophosphate
Aprt	adenine phosphoribosyltransferase
bp	base pairs
bw	body weight
CA	chromosomal aberration
CAS	Chemical Abstracts Service
CAT	chloramphenicol aminotransferase
CpG	cytosine-phosphate-guanine
CYP	cytochrome P-450
DAP	2,6-diaminopurine
DNA	deoxyribonucleic acid
FISH	fluorescence <i>in situ</i> hybridisation
GGR	global genomic repair
HID	highest ineffective dose
Hprt	hypoxanthine-guanine phosphoribosyltransferase
IARC	International Agency for Research on Cancer
IMF	induced mutant/mutation frequency
ip	intraperitoneal
IUPAC	International Union for Pure and Applied Chemistry
IWGT	International Workshop on Genotoxicity Testing
kb	kilobases
LED	lowest effective dose
Mb	megabases
MF	mutant/mutation frequency
MLA	mouse lymphoma assay
MN	micronucleus assay
mRNA	messenger ribonucleic acid
MTD	maximum tolerable dose
NTP	National Toxicology Program (USA)
O ⁶ -MeG	O ⁶ -methylguanine
OECD	Organisation for Economic Co-operation and Development
PCE	polychromatic erythrocyte
RNA	ribonucleic acid
SCE	sister chromatid exchange
SMF	spontaneous mutant frequency
TCR	transcription-coupled repair
TD ₅₀	tumorigenic dose for 50% of test animals
TGR	transgenic rodent
Tk	thymidine kinase
TRAID	Transgenic Rodent Assay Information Database
UDS	unscheduled DNA synthesis

CHEMICAL NAMES AND ABBREVIATIONS

The common names of chemicals mentioned in this report, together with the abbreviations used, their International Union for Pure and Applied Chemistry (IUPAC) equivalent names and their Chemical Abstracts Service (CAS) registry numbers, where available, are shown in the table below.

Common name	IUPAC name	CAS No.
1,10-Diazachrysene	1,10-Diazachrysene	218-21-3
1,2:3,4-Diepoxybutane	2-(Oxiran-2-yl)oxirane	1464-53-5
1,2-Dibromo-3-chloropropane	1,2-Dibromo-3-chloropropane	96-12-8
1,2-Dibromoethane	1,2-Dibromoethane	106-93-4
1,2-Dichloroethane	1,2-Dichloroethane	107-06-2
1,2-Epoxy-3-butene	2-Ethenyloxirane	930-22-3
1,3-Butadiene	Buta-1,3-diene	106-99-0
1,4-Phenylenebis(methylene)selenocyanate (p-XSC)	1,4-Bis(selenocyanatomethyl)benzene	85539-83-9
1,6-Dinitropyrene	1,6-Dinitropyrene	42397-64-8
1,7-Phenanthroline	1,7-Phenanthroline	230-46-6
1,8-Dinitropyrene	1,8-Dinitropyrene	42397-65-9
10-Azabenz(a)pyrene	10-Aza-benzo(def)chrysene	189-92-4
17 β -Oestradiol	(8R,9S,13S,14S,17S)-13-Methyl-6,7,8,9,11,12,14,15,16,17-decahydrocyclopenta(a)phenanthrene-3,17-diol	50-28-2
1-Chloromethylpyrene	1-(Chloromethyl)pyrene	1086-00-6
1-Methylphenanthrene	1-Methylphenanthrene	832-69-9
1-Nitronaphthalene	1-Nitronaphthalene	86-57-7
2,3,7,8-Tetrachlorodibenzo- <i>p</i> -dioxin (TCDD)	2,3,7,8-Tetrachlorooxanthrene	1746-01-6
2,4-Diaminotoluene	4-Methylbenzene-1,3-diamine	95-80-7
2,6-Diaminotoluene	2-Methylbenzene-1,3-diamine	823-40-5
2-Acetylaminofluorene (2-AAF)	<i>N</i> -(9H-fluoren-2-yl)acetamide	53-96-3
2-Amino-1-methyl-6-phenylimidazo(4,5- <i>b</i>)pyridine (PhIP)	1-Methyl-6-phenylimidazo(4,5- <i>b</i>)pyridin-2-amine	105650-23-5
2-Amino-3,4-dimethylimidazo(4,5- <i>f</i>)quinoline (MeIQ)	3,4-Dimethylpyrido(3,2- <i>e</i>)benzimidazol-2-amine	77094-11-2
2-Amino-3,8-dimethylimidazo(4,5- <i>f</i>)quinoxaline (MeIQx)	3,8-Dimethylimidazo(5,4- <i>h</i>)quinoxalin-2-amine	77500-04-0
2-Amino-3-methylimidazo(4,5- <i>f</i>)quinoline (IQ)	3-Methylpyrido(3,2- <i>e</i>)benzimidazol-2-amine	76180-96-6
2-Nitronaphthalene	2-Nitronaphthalene	581-89-5
2-Nitro- <i>p</i> -phenylenediamine	2-Nitrobenzene-1,4-diamine	5307-14-2
3-Amino-1-methyl-5H-pyrido(4,3- <i>b</i>)indole (Trp-P-2)	1-Methyl-5H-pyrido(4,5- <i>b</i>)indol-3-amine	62450-07-1
3-Chloro-4-(dichloromethyl)-5-hydroxy-2(5H)-furanone (MX)	3-Chloro-4-(dichloromethyl)-5-hydroxy-5H-furan-2-one	77439-76-0
3-Fluoroquinoline	3-Fluoroquinoline	396-31-6
3H-1,2-dithiole-3-thione (D3T)	Dithiole-3-thione	534-25-8
3-Methylcholanthrene	3-Methyl-1,2-dihydro-benzo(<i>j</i>)aceanthrylene	56-49-5
3-Nitrobenzanthrone	3-Nitro-7H-benz(<i>de</i>)anthracen-7-one	17117-34-9

Common name	IUPAC name	CAS No.
4-(Methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK)	<i>N</i> -Methyl- <i>N</i> -(4-oxo-4-pyridin-3-ylbutyl)nitrous amide	64091-91-4
4,10-Diazachrysene	4,10-Diazachrysene	218-34-8
4-Acetylaminofluorene (4-AAF)	<i>N</i> -(9H-Fluoren-4-yl)acetamide	28322-02-3
4-Aminobiphenyl	4-Phenylaniline	92-67-1
4-Chloro- <i>o</i> -phenylenediamine	4-Chlorobenzene-1,2-diamine	95-83-0
4-Hydroxybiphenyl	4-Phenylphenol	92-69-3
4-Monochlorobiphenyl	1-Chloro-4-phenylbenzene	2051-62-9
4-Nitroquinoline-1-oxide (4-NQO)	4-Nitro-1-oxidoquinolin-1-ium	56-57-5
5-(2-Chloroethyl)-2'-deoxyuridine (CEDU)	5-(2-Chloroethyl)-1-((2R,4S,5R)-4-hydroxy-5-(hydroxymethyl)oxolan-2-yl)pyrimidine-2,4-dione	90301-59-0
5-(<i>p</i> -Dimethylaminophenyl-azo)benzothiazole	4-(1,3-Benzothiazol-5-yl diazenyl)- <i>N,N</i> -dimethylaniline	18463-90-6
5,9-Dimethyldibenzo(c,g)carbazole (DMDBC)	5,9-Dimethyl-7H-dibenzo(c,g)carbazole	88193-04-8
5-Bromo-2'-deoxyuridine (BrdU)	5-Bromo-1-((2R,4S,5R)-4-hydroxy-5-(hydroxymethyl)oxolan-2-yl)pyrimidine-2,4-dione	59-14-3
5-Fluoroquinoline	5-Fluoroquinoline	394-69-4
6-(<i>p</i> -Dimethylaminophenyl-azo)benzothiazole	4-(1,3-Benzothiazol-6-yl diazenyl)- <i>N,N</i> -dimethylaniline	18463-85-9
6,11-Dimethylbenzo(b)naphtho(2,3-d)thiophene	6,11-Dimethylnaphtho(3,2-b)(1)benzothiole	32362-68-8
6-Nitrochrysene	6-Nitrochrysene	7496-02-8
7,12-Dimethylbenzanthracene (7,12-DMBA)	7,12-Dimethylbenzo(b)phenanthrene	57-97-6
7H-Dibenzo(c,g)carbazole (DBC)	7H-Dibenzo(c,g)carbazole	194-59-2
7-Methoxy-2-nitronaphtho(2,1-b)furan (R7000)	7-Methoxy-2-nitrobenzo(e)(1)benzoxole	75965-74-1
8-Methoxypsoralen	9-Methoxyfuro(3,2-g)chromen-7-one	298-81-7
87-966	87-966	nd
A- α -C	9H-Pyrido(6,5-b)indol-2-amine	26148-68-5
Acetaminophen	<i>N</i> -(4-Hydroxyphenyl)acetamide	103-90-2
Acetic acid	Acetic acid	64-19-7
Acetone	Propan-2-one	67-64-1
Acrylamide	Prop-2-enamide	79-06-1
Acrylonitrile	Prop-2-enenitrile	107-13-1
Adozelesin	(7bR,8aS)- <i>N</i> -(2-((4,5,8,8a-Tetrahydro-7-methyl-4-oxocyclopropa(c)pyrrolo(3,2-e)indol-2(1H)-yl)carbonyl)indol-5-yl)-2-benzofurancarboxamide	110314-48-2
Aflatoxin B1	2,3,6 α ,9 α -Tetrahydro-4-methoxycyclopenta(c)furo(2',3':4,5)furo(2,3-h)chromene-1,11-dione	1162-65-8
Agaritine	(2S)-2-Amino-5-(2-(4-(hydroxymethyl)phenyl)hydrazinyl)-5-oxopentanoic acid	2757-90-6
all- <i>trans</i> -Retinol	(2E,4E,6E,8E)-3,7-Dimethyl-9-(2,6,6-trimethyl-1-cyclohexenyl)nona-2,4,6,8-tetraen-1-ol	68-26-8
α -Chaconine	beta-D-Glucopyranoside, (3beta)-solanid-5-en-3-yl O-6-deoxy-alpha-L-mannopyranosyl-(1-2)-O-(6-deoxy-alpha-L-mannopyranosyl-(1-4))-	20562-03-2
α -Hydroxytamoxifen	(E)-4-(4-(2-Dimethylaminoethoxy)phenyl)-3,4-di(phenyl)but-3-en-2-ol	97151-02-5
α -Solanine	Solanid-5-en-3-yl	20562-02-1

Common name	IUPAC name	CAS No.
alpha-Tocopherol	(2R)-2,5,7,8-Tetramethyl-2-((4R,8R)-4,8,12-trimethyltridecyl)chroman-6-ol	59-02-9
Aminophenylnorharman	4-Pyrido(3,4-b)indol-9-ylaniline	219959-86-1
Amosite asbestos	Amosite asbestos	12172-73-5
AMP397	((7-Nitro-2,3-dioxo-1,4-dihydroquinoxalin-5-yl)methylamino)methylphosphonic acid	188696-80-2
Aristolochic acid	8-Methoxy-6-nitronaphtho(2,1-g)(1,3)benzodioxole-5-carboxylic acid	10190-99-5
Arsenite trioxide	Arsenite trioxide	1327-53-3
Azathioprine	6-(3-Methyl-5-nitroimidazol-4-yl)sulfanyl-7H-purine	446-86-6
Benzene	Benzene	71-43-2
Benzo(a)pyrene (B(a)P)	Benzo(a)pyrene	50-32-8
Benzo(a)pyrene diolepoxide (BPDE)	7,8,8a,9a-Tetrahydrobenzo(10,11)chryseno(3,4-b)oxirene-7,8-diol	58917-67-2
Benzo(f)quinoline	Benzo(f)quinoline	85-02-9
Benzo(h)quinoline	Benzo(h)quinoline	230-27-3
beta-Propiolactone	Oxetan-2-one	57-57-8
Bitumen fumes	Bitumen fumes	8052-42-4
Bleomycin	3-((2-(2-(2-((4-((6-amino-2-(3-amino-1-((2,3-diamino-3-oxopropyl)amino)-3-oxopropyl)-5-methylpyrimidine-4-carbonyl)amino)-3-(3-(4-carbamoyloxy-3,5-dihydroxy-6-(hydroxymethyl)oxan-2-yl)oxy-4,5-dihydroxy-6-(hydroxymethyl)oxan-2-yl)oxy-3-(3H-imidazol-4-yl)propanoyl)amino)-3-hydroxy-2-methylpentanoyl)amino)-3-hydroxybutanoyl)amino)ethyl)-1,3-thiazol-4-yl)1,3-thiazole-4-carbonyl)amino)propyl-dimethylsulfanium	11056-06-7
Carbon tetrachloride	Tetrachloromethane	56-23-5
Carboxymethylcellulose		9000-11-7
CC-1065	Benzo(1,2-b:4,3-b')dipyrrole-3(2H)-carboxamide, 7-((1,6-dihydro-4-hydroxy-5-methoxy-7-((4,5,8,8a-tetrahydro-7-methyl-4-oxocyclopropa(c)pyrrolo(3,2-e)indol-2(1H)-yl)carbonyl)benzo(1,2-b:4,3-b')dipyrrol-3(2H)-yl)carbonyl)-1,6-dihydro-4-hydroxy-5-methoxy-, (7bR)-	69866-21-3
Chlorambucil	4-(4-(Bis(2-chloroethyl)amino)phenyl)butanoic acid	305-03-3
Chloroform	Chloroform	67-66-3
Chrysene	Chrysene	218-01-9
Cisplatin	<i>cis</i> -Diamminedichloridoplatinum(II)	15663-27-1
Clofibrate	Ethyl 2-(4-chlorophenoxy)-2-methylpropanoate	637-07-0
Coal tar	Coal tar	8007-45-2
Comfrey	(7-((E)-2-Methylbut-2-enoyl)oxy-4-oxido-5,6,7,8-tetrahydro-3H-pyrrolizin-4-ium-1-yl)methyl 2-hydroxy-2-(1-hydroxyethyl)-3-methylbutanoate	72698-57-8
Conjugated linoleic acid (CLA)	(9Z,11E)-Octadeca-9,11-dienoic acid	1839-11-8
Corn oil		8001-30-7
Crocidolite asbestos	Crocidolite asbestos	12001-28-4
Cyclophosphamide	<i>N,N</i> -bis(2-Chloroethyl)-2-oxo-1-oxa-3-aza-2{5}-phosphacyclohexan-2-amine	50-18-0
Cyproterone acetate	3'H-Cyclopropa(1,2)pregna-1,4,6-triene 3,20-dione,6-chloro-1-beta,2-beta-dihydro-17-hydroxy-	427-51-0
Daidzein	7-Hydroxy-3-(4-hydroxyphenyl)chromen-4-one	486-66-8
Di(2-ethylhexyl)phthalate (DEHP)	Bis(2-ethylhexyl) benzene-1,2-dicarboxylate	117-81-7
Diallyl sulphide	3-Prop-2-enylsulfanylprop-1-ene	592-88-1

Common name	IUPAC name	CAS No.
Diallyl sulphone	3-Prop-2-enylsulfonylprop-1-ene	16841-48-8
Dichloroacetic acid (DCA)	2,2-Dichloroacetic acid	79-43-6
Dicyclanil	4,6-Diamino-2-(cyclopropylamino)pyrimidine-5-carbonitrile	112636-83-6
Diethylnitrosamine (DEN)	<i>N,N</i> -Diethylnitrous amide	55-18-5
Dimethylarsinic acid	Dimethylarsinic acid	75-60-5
Dimethylnitrosamine (DMN)	<i>N,N</i> -Dimethylnitrous amide	62-75-9
Dinitropyrenes	Dinitropyrenes	nd
Dipropylnitrosamine (DPN)	<i>N,N</i> -Dipropylnitrous amide	621-64-7
d-Limonene	(4R)-1-Methyl-4-prop-1-en-2-ylcyclohexene	5989-27-5
Ellagic acid	2,3,7,8-Tetrahydroxy-chromeno(5,4,3-cde)chromene-5,10-dione	476-66-4
Ethanol	Ethanol	64-17-5
Ethylene oxide	Oxirane	75-21-8
Ethylmethanesulphonate (EMS)	Ethyl methanesulfonate	62-50-0
Etoposide	4'-Demethyl-epipodophyllotoxin 9-(4,6-O-(R)-ethylidene-beta-D-glucopyranoside), 4'-(dihydrogen phosphate)	33419-42-0
Eugenol	2-Methoxy-4-prop-2-enylphenol	97-53-0
Ferric nitrilotriacetate	2-(bis(2-Oxido-2-oxoethyl)amino)acetate; iron(+3) cation	16448-54-7
Flumequine	9-Fluoro-5-methyl-1-oxo-6,7-dihydro-1H,5H-pyrido(3,2,1-ij)quinoline-2-carboxylic acid	42835-25-6
Folic acid	(2S)-2-((4-((2-Amino-4-oxo-1H-pteridin-6-yl)methyl-amino)benzoyl)amino)pentanedioic acid	59-30-3
Fructose	(3S,4R,5R)-1,3,4,5,6-Pentahydroxyhexan-2-one	57-48-7
Genistein	5,7-Dihydroxy-3-(4-hydroxyphenyl)chromen-4-one	446-72-0
Glucose	(3R,4S,5S,6R)-6-(Hydroxymethyl)oxane-2,3,4,5-tetrol	50-99-7
Glycidamide	Oxirane-2-carboxamide	5694-00-8
Heptachlor	1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-1H-4,7-methanoindene	76-44-8
Hexachlorobutadiene	1,1,2,3,4,4-Hexachlorobuta-1,3-diene	87-68-3
Hexavalent chromium	Chromium(VI)	7440-47-3
Hydrazine sulphate	Hydrazine sulfate	10034-93-2
Hydroxyurea	Hydroxyurea	127-07-1
Isopropylmethanesulphonate (IPMS)	Propan-2-yl methanesulfonate	926-06-7
Jervine	(3S,3'R,3'aS,6'S,6aS,6bS,7'aR,9R,11aS,11bR)-3-Hydroxy-3',6',10,11b-tetramethylspiro(1,2,3,4,6,6a,6b,7,8,11a-decahydrobenzo(i)fluorene-9,2'-3a,4,5,6,7,7a-hexahydro-3H-furo(4,5-b)pyridine)-11-one	469-59-0
Kojic acid	5-Hydroxy-2-(hydroxymethyl)pyran-4-one	501-30-4
Leucomalachite green	4-((4-Dimethylaminophenyl)-phenylmethyl)- <i>N,N</i> -dimethylaniline	129-73-7
Levofloxacin	(-)-(S)-9-Fluoro-2,3-dihydro-3-methyl-10-(4-methyl-1-piperazinyl)-7-oxo-7H-pyrido(1,2,3-de)-1,4-benzoxazine-6-carboxylic acid	100986-85-4
Lycopene	(6E,8E,10E,12E,14E,16E,18E,20E,22E,24E,26E)-2,6,10,14,19,23,27,31-Octamethyldotriaconta-2,6,8,10,12,14,16,18,20,22,24,26,30-tridecaene	502-65-8
Malachite green	(4-((4-Dimethylaminophenyl)-phenylmethylidene)-1-cyclohexa-2,5-dienylidene)-dimethylazanium chloride	569-64-2
Methyl bromide	Bromomethane	74-83-9
Methylcellulose		9004-67-5

Common name	IUPAC name	CAS No.
Methyl clofenapate	Methyl 2-(4-(4-chlorophenyl)phenoxy)-2-methylpropanoate	21340-68-1
Methylmethanesulphonate (MMS)	Methylmethanesulfonate	66-27-3
Metronidazole	2-(2-Methyl-5-nitroimidazol-1-yl)ethanol	443-48-1
Mitomycin-C	6-Amino-1,1a,2,8,8a,8b-hexahydro-8-(hydroxymethyl)-8a-methoxy-5-methyl-azirino(2',3':3,4) pyrrolo(1,2-a)indole-4,7-dione carbamate (ester)	50-07-7
N7-Methyldibenzo(c,g)carbazole (NMDBC)	<i>N</i> -Methyl-7H-dibenzo(c,g)carbazole	27093-62-5
<i>N</i> -Ethyl- <i>N</i> -nitrosourea (ENU)	1-Ethyl-1-nitrosourea	759-73-9
<i>N</i> -Hydroxy-2-acetylaminofluorene	<i>N</i> -(9H-Fluoren-2-yl)- <i>N</i> -hydroxyacetamide	53-95-2
Nickel subsulphide	Nickel sulfide	12035-72-2
Nifuroxazide	4-Hydroxy- <i>N</i> -((5-nitrofuran-2-yl)methylideneamino)benzamide	965-52-6
Nitrofurantoin	1-((5-Nitrofuran-2-yl)methylideneamino)imidazolidine-2,4-dione	67-20-9
<i>N</i> -Methyl- <i>N</i> -nitro- <i>N</i> -nitrosoguanidine (MNNG)	1-Methyl-2-nitro-1-nitrosoguanidine	70-25-7
<i>N</i> -Methyl- <i>N</i> -nitrosourea (MNU)	1-Methyl-1-nitrosourea	684-93-5
<i>N</i> -Nitrosodibenzylamine (NDBZA)	<i>N,N</i> -Bis(phenylmethyl)nitrous amide	5336-53-8
<i>N</i> -Nitrosomethylbenzylamine	<i>N</i> -Methyl- <i>N</i> -(phenylmethyl)nitrous amide	937-40-6
<i>N</i> -Nitrosornicotine (NNN)	3-(1-Nitrosopyrrolidin-2-yl)pyridine	80508-23-2
<i>N</i> -Nitrosopyrrolidine	1-Nitrosopyrrolidine	930-55-2
<i>N</i> -Propyl- <i>N</i> -nitrosourea (PNU)	1-Nitroso-1-propylurea	816-57-9
<i>o</i> -Aminoazotoluene	2-Methyl-4-(2-methylphenyl)diazenylaniline	97-56-3
<i>o</i> -Anisidine	2-Methoxyaniline	90-04-0
Olive oil		8001-25-0
Oxazepam	7-Chloro-3-hydroxy-5-phenyl-1,3-dihydro-1,4-benzodiazepin-2-one	604-75-1
<i>p</i> -Cresidine	2-Methoxy-5-methylaniline	120-71-8
Peroxyacetyl nitrate (PAN)	Nitro ethaneperoxoate	2278-22-0
Phenobarbital	5-Ethyl-5-phenyl-1,3-diazinane-2,4,6-trione	50-06-6
Phorbol-12-myristate-13-acetate (TPA)	12- <i>O</i> -tetradecanoylphorbol-13-acetate	16561-29-8
Phosphate buffer		nd
Phorone	2,6-Dimethylhepta-2,5-dien-4-one	504-20-1
Polyphenon E	Polyphenon E	188265-33-0
Potassium bromate	Potassium bromate	7758-01-2
Procarbazine hydrochloride	4-((2-Methylhydrazinyl)methyl)- <i>N</i> -propan-2-ylbenzamide hydrochloride	366-70-1
Propylene glycol	Propane-1,2-diol	57-55-6
Quinoline	Quinoline	91-22-5
Riddelliine	7-Ethylidene-10-hydroxy-10-hydroxymethyl-9-methylene-2,3,4,4a,7,8,9,10,13,13b-decahydro-5,12-dioxa-2a-azacyclododeca(cd)pentalene-6,11-dione	23246-96-0
Saline		nd
Sesame oil		8008-74-0
Sodium bicarbonate	Sodium hydrogen carbonate	144-55-8
Sodium saccharin	Sodium 1,1-dioxo-1,2-benzothiazol-2-ylid-3-one	128-44-9
Solanidine	Solanid-5-en-3beta-ol	80-78-4
Solasodine	Spirosol-5-en-3-ol	126-17-0

Common name	IUPAC name	CAS No.
Soy oil		8001-22-7
Streptozotocin	1-Methyl-1-nitroso-3-((2S,3R,4R,5S,6R)-2,4,5-trihydroxy-6-(hydroxymethyl)oxan-3-yl)urea	18883-66-4
Sucrose	(2R,3R,4S,5S,6R)-2-((2S,3S,4S,5R)-3,4-Dihydroxy-2,5-bis(hydroxymethyl)oxolan-2-yl)oxy-6-(hydroxymethyl)oxane-3,4,5-triol	57-50-1
Tamoxifen	2-(4-((Z)-1,2-Di(phenyl)but-1-enyl)phenoxy)-N,N-dimethylethanamine	10540-29-1
Thiotepa	Tris(aziridin-1-yl)-sulfanylidene phosphorane	52-24-4
Toremifene citrate	2-(4-((Z)-4-Chloro-1,2-di(phenyl)but-1-enyl)phenoxy)-N,N-dimethylethanamine 2-hydroxypropane-1,2,3-tricarboxylic acid	89778-27-8
<i>trans</i> -4-Hydroxy-2-nonenal	(E)-4-Hydroxynon-2-enal	128946-65-6
Tricaprylin	1,3-Di(octanoyloxy)propan-2-yl octanoate	538-23-8
Trichloroethylene (TCE)	1,1,2-Trichloroethene	79-01-6
Tris-(2,3-dibromopropyl)phosphate	Tris(2,3-dibromopropyl) phosphate	126-72-7
Uracil	1H-Pyrimidine-2,4-dione	66-22-8
Urethane	Ethyl carbamate	51-79-6
Vinyl carbamate	Ethenyl carbamate	15805-73-9
Vitamin E	(2R)-2,5,7,8-Tetramethyl-2-((4R,8R)-4,8,12-trimethyltridecyl)chroman-6-ol	59-02-9
Water	Water	7732-18-5
Wyeth 14,643	2-(4-Chloro-6-((2,3-dimethylphenyl)amino)pyrimidin-2-yl)sulfanylacetic acid	50892-23-4

