New Psychoactive Substances (NPS)

Reference materials
2018

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LGC offers the most extensive and up-to-date range of New Psychoactive Substances (NPS) reference materials.

The challenge

New Psychoactive Substances (NPS) continue to be identified, and it appears that moves by the United Nations and by individual countries to control lists of named NPS may be encouraging the development of yet further variants to avoid these controls.

Strategies used to develop new materials include creating modified versions of pharmaceuticals, 'reviving' forgotten pharmaceuticals from old research literature and making 'bioisosteres' of controlled materials, where sub-units within a controlled molecule are replaced by other units with similar chemical, spatial and electrical characteristics.

The LGC response

In response to the ever-expanding range of NPS being developed, LGC has produced a comprehensive range of reference materials that meet the rapidly changing demands of the NPS landscape. Many of these products are produced under the rigorous quality assurance standards set out in ISO Guide 34. If you don't see what you are looking for, please contact your local sales office as the range of these products is continuously evolving.

LGC Standards provides the widest range of reference materials available from any single supplier. We work closely with leading manufacturers to provide improved access to reference materials, with an increasingly large range of parameters, for laboratories worldwide. LGC Standards has both extensive reference material sales experience and technical expertise that allows us to work in successful partnership with our customers.

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1.1.7	N,N-Diethyl-PEA	
1.1.8	β-Methoxy-PEA	2-MeO-2-phenylethylamine
1.1.9	α-Ethyl-PEA	Butanphenamine, 2-Amino-1-phenylbutane
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1.1.11	N-Ethyl-α-ethyl-PEA	2-Ethylamino-1-phenylbutane
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1.2.15	2C-H	2,5-DiMeO-PEA
1.2.16	2C-H-D6	
1.2.17	2C-H-13C-6 (13C in ring)	
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1.2.20	2C-I-D6	
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1.2.24	2C-N-D6	
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1.2.26	2C-P	2,5-DiMeO-4-Pr-PEA
1.2.27	2C-iP	2,5-DiMeO-4-iPr-PEA

Ref	Substance	Other names
1.2.28	2C-T	2,5-DiMeO-4-MeS-PEA
1.2.29	2-CT-2	2,5-DiMeO-4-EtS-PEA
1.2.30	2-CT-2-D6	
1.2.31	2-CT-2-13C-D3	
1.2.32	2-C-T-4	2,5-DiMeO-4-iPrS-PEA
1.2.33	2-C-T-4-13C,D3	
1.2.34	2-C-T-7	2,5-DiMeO-4-PrS-PEA
1.2.35	2-C-T-7-D6	
1.2.36	2-C-T-7-13C,D3	
1.2.37	2-C-T-21	2,5-DiMeO-4-(2-FlEtS)-PEA
1.2.38	2C-O-4	2,5-DiMeO-4-iPrO-PEA
1.2.39	2C-TFM	2,5-DiMeO-4-TriFlMe-PEA
1.2.40	DMPEA	3,4-DiMeO-PEA
1.2.41	2C-O	2,4,5-TriMeO-PEA
1.2.42	2C-G-4	5,6,7,8-TetraH-1,4-DiMeO-2-Naphth-EA
1.2.43	2C-G-N	2-(1,4-DiMeO-Naphth)-EA

1.3	"2C-X"-NBOMe and related derivatives	
1.3.1	25B-NBOMe, 2CB-NBOMe, 25B-NB2OMe	N-(2-Methoxybenzyl)-2C-B
1.3.2	25B-NBOMe-D3	
1.3.3	25B-NBOMe-D6	
1.3.4	25B-NB3OMe	N-(3-Methoxybenzyl)-2C-B
1.3.5	25B-NB4OMe	N-(4-Methoxybenzyl)-2C-B
1.3.6	25-B-NBF	N-(2-Fluorobenzyl)-2C-B
1.3.7	25-NBOH	N-(2-Fluorobenzyl)-2C-B
1.3.8	2C-C-NBOMe	N-(2-Methoxybenzyl)-2C-C
1.3.9	25C-NBOMe-D3	
1.3.10	25C-NBOMe-D6	
1.3.11	25C-NB3OMe	N-(3-Methoxybenzyl)-2C-C
1.3.12	2C-C-NBOH	N-(2-Hydroxybenzyl)-2C-C
1.3.13	25-C-NBF	N-(2-Fluorobenzyl)-2C-C
1.3.14	C30-NBOMe	N-(3,4,5-Trimethoxybenzyl)-2C-C
1.3.15	25D-NBOMe	N-(2-Methoxybenzyl)-2C-D
1.3.16	25D-NBOMe-D3	
1.3.17	25E-NBOMe	N-(2-Methoxybenzyl)-2C-E
1.3.18	25E-NBOH	N-(2-Hydroxybenzyl)-2C-E
1.3.19	25G-NBOMe	N-(2-Methoxybenzyl)-2C-G
1.3.20	25H-NBOMe	N-(2-Methoxybenzyl)-2C-H
1.3.21	25H-NB4OMe	N-(4-Methoxybenzyl)-2C-H
1.3.22	25-H-NBOMe (imine analogue)	N-(2-Methoxybenzylidene)-2C-H
1.3.23	25H-NBOH	N-(2-Hydroxybenzyl)-2C-H
1.3.24	25H-NBF	N-(2-Fluorobenzyl)-2C-H
1.3.25	25H-NBMD	N-(2,3-Methylenedioxybenzyl)-2C-H
1.3.26	25-iP-NBOMe	N-(2-Methoxybenzyl)-2C-iP

Ref	Substance	Other names
1.3.27	25I-NBF	N-(2-Fluorobenzyl)-2C-I
1.3.28	25I-NBOH	N-(2-Hydroxybenzyl)-2C-I
1.3.29	25I-NBOMe	N-(2-Methoxybenzyl)-2C-I
1.3.30	25I-NBOMe-D3	
1.3.31	25I-NBOMe-D6	
1.3.32	25I-NBOMe-D9	
1.3.33	25I-NBOMe (imine analogue)	N-(2-Methoxybenzylidene)-2C-I
1.3.34	25I-NBOMe (3-methoxy isomer)	N-(3-Methoxybenzyl)-2C-I
1.3.35	25I-NBOMe (4-methoxy isomer)	N-(4-Methoxybenzyl)-2C-I
1.3.36	N-Acetyl-25I-NBOMe	
1.3.37	25I-NBMD	N-(2,3-Methylenedioxybenzyl)-2C-I
1.3.38	25N-NBOMe	N-(2-Methoxybenzyl)-2C-N
1.3.39	25P-NBOMe	N-(2-Methoxybenzyl)-2C-P
1.3.40	2-CT-NBOMe	N-(2-Methoxybenzyl)-2C-T
1.3.41	2-CT-2-NBOMe	N-(2-Methoxybenzyl)-2C-T-2
1.3.42	2-CT-4-NBOMe	N-(2-Methoxybenzyl)-2C-T-4
1.3.43	2-CT-7-NBOMe	N-(2-Methoxybenzyl)-2C-T-7
1.3.44	Mescaline-NBOMe	N-(2-MeO benzyl)-3,4,5-TriMeO PEA

1.4	Methylenedioxyphenethylamines & amphetamines	
1.4.1	MDPEA	3,4-Methylenedioxy-PEA
1.4.2	MDMPEA, Homarylamine	N-Methyl-3,4-methylenedioxy-PEA
1.4.3	N-Me Homarylamine	N,N-Dimethyl-3,4-methylenedioxy-PEA
1.4.4	UWA-101	α-Cyclopropyl-3,4-MDO-N-Me-PEA
1.4.5	MDA (Tenamfetamine)	3,4-Methylenedioxy-Amph
1.4.6	MDA-D2	3,4-Methylenedioxy-Amph-D2
1.4.7	MDA-D5	3,4-Methylenedioxy-Amph-D6
1.4.8	MDA-13C6	
1.4.9	2,3-MDA	2,3-Methylenedioxy-Amph
1.4.10	MMDA-2	2-MeO-MDA
1.4.11	MMDA	3-MeO-MDA
1.4.12	MDDM, 3,4-MDDMA	N,N-Dimethyl-MDA
1.4.13	MDPR	N-Propyl-MDA
1.4.14	MDOH	N-Hydroxy-MDA
1.4.15	MDMA ('Ecstasy', 'Adam')	3,4-Methylenedioxy-Methamphet
1.4.16	MDMA-D3	3,4-Methylenedioxy-Methamphet-D3
1.4.17	MDMA-D5	3,4-Methylenedioxy-Methamphet-D5
1.4.18	MDMA-13C-6	
1.4.19	2,3-MDMA	2,3-Methylenedioxy-Methamphet
1.4.20	2,3-MDMA-D3	2,3-Methylenedioxy-Methamphet-D3
1.4.21	MMDMA	5-MeO-MDMA
1.4.22	2-Br-4,5-MDMA	2-Br-4,5-methylenedioxy-Methamphet
1.4.23	2-Cl-4,5-MDMA	2-Cl-4,5-methylenedioxy-Methamphet
1.4.24	N-tBOC-MDMA (precursor/pro-drug)	N-tert-Butoxycarbonyl MDMA

Ref	Substance	Other names
1.4.25	MDEA ('Eve')	3,4-Methylenedioxy-Ethamphet
1.4.26	MDEA-D5	3,4-Methylenedioxy-Ethamphet-D5
1.4.27	MDEA-D6	3,4-Methylenedioxy-Ethamphet-D6
1.4.28	MDEA-13C6	
1.4.29	MDEA 2,3 isomer	2,3-Methylenedioxy-Ethamphet
1.4.30	BDB ('J')	1-(1,3-Benzodioxol-5-yl)-2-butanamine
1.4.31	BDB-D2	
1.4.32	MBDB ('Eden', 'Methyl-J')	N-Me-(1,3-benzodioxol-5-yl)-2-butanamine
1.4.33	MBDB-D3	
1.4.34	MBDB-D5	
1.4.35	EBDB ('Ethyl-J')	2-EtAmino-1-(3,4-MDOphenyl)butane
1.4.36	3,4-EDMA	3,4-Ethylenedioxy-Methamphet

1.5	Trialkoxyphenethylamines	
1.5.1	2C-O	2,4,5-TriMeO-PEA
1.5.2	2C-O-4	2,5-DiMeO-4-iPrO-PEA
1.5.3	M (Mescaline)	3,4,5-TriMeO-PEA
1.5.4	Mescaline-D9	
1.5.5	Escaline	3,5-DiMeO-4-EtO-PEA
1.5.6	Escaline-D3	
1.5.7	Metaescaline	3,4-DiMeO-5-EtO-PEA
1.5.8	Allylescaline	3,5-DiMeO -4-(CH2:CH2-CH2O)-PEA
1.5.9	Proscaline	3,5-DiMeO-4-PrO-PEA

1.6	"Fly" and "Dragonfly" compounds	
1.6.1	Fly	
1.6.2	2C-B-Fly	
1.6.3	2C-B-Fly-D4	
1.6.4	3C-B-Fly	alpha-Me-2C-B-Fly
1.6.5	Dragonfly	
1.6.6	Bromodragonfly'	1-(8-Bromobenzodifuran-4-yl)-2-aminopropane
1.6.7	'Bromodragonfly'-D5	
1.6.8	'Bromodragonfly'-D6	
1.6.9	R-(-)-Bromodragonfly	

1.7	"Benzofuries" (APBs and APDBs)	
1.7.1	5-(2-Aminoethyl)-2,3-dihydrobenzofuran	5-AEDB
1.7.2	2-(2-Aminopropyl)benzofuran	2-APB
1.7.3	4-(2-Aminopropyl)benzofuran	4-APB
1.7.4	5-(2-Aminopropyl)benzofuran	5-APB
1.7.5	5-(2-Aminopropyl)benzofuran-D5	
1.7.6	5-(2-Aminopropyl)benzofuran-D6	
1.7.7	6-(2-Aminopropyl)benzofuran	6-APB
1.7.8	6-(2-Aminopropyl)benzofuran-D5	

Ref	Substance	Other names
1.7.9	6-(2-Aminopropyl)benzofuran-D6	
1.7.10	4- and 6-(2-Aminopropyl)benzofuran	4- & 6-APB
1.7.11	7-(2-Aminopropyl)benzofuran	7-APB
1.7.12	5-APB-NBOMe	N-MOB-5-APB
1.7.13	N-Methyl 2-(2-Aminopropyl)benzofuran	2-MAPB
1.7.14	N-Methyl 3-(2-Aminopropyl)benzofuran	3-MAPB
1.7.15	N-Methyl 4-(2-Aminopropyl)benzofuran	4-MAPB
1.7.16	N-Methyl 5-(2-Aminopropyl)benzofuran	5-MAPB
1.7.17	N-Methyl 6-(2-Aminopropyl)benzofuran	6-MAPB
1.7.18	N-Methyl 7-(2-Aminopropyl)benzofuran	7-MAPB
1.7.19	4-(N-Ethyl-2-Aminopropyl)benzofuran	4-EAPB
1.7.20	5-(N-Ethyl-2-Aminopropyl)benzofuran	5-EAPB
1.7.21	6-(N-Ethyl-2-Aminopropyl)benzofuran	6-EAPB
1.7.22	4-(2-Aminopropyl)-2,3-dihydrobenzofuran	4-APDB
1.7.23	5-(2-Aminopropyl)-2,3-dihydrobenzofuran	5-APDB
1.7.24	6-(2-Aminopropyl)-2,3-dihydrobenzofuran	6-APDB
1.7.25	7-(2-Aminopropyl)-2,3-dihydrobenzofuran	7-APDB
1.7.26	5-(N-Methyl-2-Aminopropyl)-2,3-dihydrobenzofuran	5-MAPDB

1.8	Other phenethylamine-related compounds	
1.8.1	M-ALPHA	1-Methylamino-1-(3,4-MDOphenyl)propane.HCl
1.8.2	Methylenedioxyaminoindane	MDAI
1.8.3	N-Methyl methylenedioxyaminoindane	MDMAI
1.8.4	5-Methoxy-6-methyl-2-aminoindane	MMAI
1.8.5	Methylenedioxyaminotetralin	MDAT
1.8.6	Heliomethylamine	MDMA methylene homologue

2.0 Metabolites of 'Ecstasy' Chems

Ref	Parent compound	Metabolite

2.1	MDA	
2.1.1		3,4-Dihydroxy-Amph
2.1.2		N-Hydroxy-MDA
2.1.3		3-MeO-4-hydroxy-Amph

2.2	MDMA	
2.2.1		3,4-Dihydroxy-N-Me-Amph
2.2.2		3,4-Dihydroxy-N-Me-Amph-D3
2.2.3		3-MeO-4-hydroxy-N-Me-Amph
2.2.4		3-MeO-4-hydroxy-N-Me-Amph-D3
2.2.5		3-MeO-4-hydroxy-N-Me-Amph Glucuronide
2.2.6		3-MeO-4-hydroxy-N-Me-Amph-d3 Glucuronide
2.2.7		3',4'-Dihydroxyphenylacetone

Ref	Parent compound	Metabolite
2.3	**MDEA**	
2.3.1		3,4-Dihydroxy-N-Et-Amph
2.3.2		3-MeO-4-hydroxy-N-Et-Amph
2.3.3		3',4'-Dihydroxyphenylacetone
2.4	**BDB**	
2.4.1		3,4-Dihydroxyphenyl-butan-2-amine
2.4.2		3-MeO-4-hydroxyphenyl-butan-2-amine
2.5	**MBDB**	
2.5.1		3,4-Dihydroxyphenyl-N-Me-butan-2-amine
2.5.2		3-MeO-4-hydroxyphenyl-N-Me-butan-2-amine

3.0 Amphetamines

Ref	Substance	Other names
3.1	**Amphetamine**	
3.1.1	R(-)-Amphetamine	
3.1.2	S(+)-Amphetamine	Dexamfetamine
3.1.3	S(+)-Amphetamine-D3	
3.1.4	Amphetamine-D3	
3.1.5	Amphetamine-D5 (D on ring)	
3.1.6	Amphetamine-D5 (D on side chain)	
3.1.7	Amphetamine-D6	
3.1.8	Amphetamine-D8	
3.1.9	Amphetamine-D10	
3.1.10	Amphetamine-D11	
3.1.11	Amphetamine- 13C-6 (13C in ring)	
3.1.12	2-Br Amphetamine	
3.1.13	3-Br Amphetamine	
3.1.14	4-Br Amphetamine	
3.1.15	4-Br Amphetamine-D3	
3.1.16	2-Cl Amphetamine	
3.1.17	3-Cl Amphetamine	
3.1.18	4-Cl Amphetamine	
3.1.19	2-Fl Amphetamine	
3.1.20	2-Fl Amphetamine-D5 (D on side chain)	
3.1.21	2-Fl Amphetamine-D6	
3.1.22	3-Fl Amphetamine	
3.1.23	4-Fl Amphetamine	
3.1.24	4-Fl Amphetamine-D5 (D on side chain)	
3.1.25	4-Hydroxy Amphetamine	Hydroxyamfetamine
3.1.26	4-Hydroxy Amphetamine-D5	

Ref	Substance	Other names
3.1.27	2-Iodo Amphetamine	
3.1.28	3-Iodo Amphetamine	
3.1.29	4-Iodo Amphetamine	
3.1.30	2-Me Amphetamine	Ortetamine
3.1.31	3-Me Amphetamine	
3.1.32	4-Me Amphetamine	
3.1.33	4-Me Amphetamine-D6	
3.1.34	2-MeO Amphetamine	
3.1.35	3-MeO Amphetamine	
3.1.36	4-MeO-Amphetamine	PMA
3.1.37	4-MeO-Amphetamine 13C6 (13C on ring)	
3.1.38	3-CF3-Amphetamine	Desethylfenfluoramine
3.1.39	4-MeS-Amphetamine	4-MTA, ('Flatliner')
3.1.40	4-Me-Amphetamine NBOMe	4-MA-NBOMe
3.1.41	4-Et-Amphetamine NBOMe	4-EA-NBOMe

3.2	Dimethoxyamphetamines	
3.2.1	2,4-DiMeO-Amph	2,4-DMA
3.2.2	2,5-DiMeO-Amph	2,5-DMA
3.2.3	2,5-DiMeO-Amph-D6	2,5-DMA-D6
3.2.4	3,4-DiMeO-Amph	3,4-DMA
3.2.5	3,5-DiMeO-Amph	
3.2.6	2,5-DiMeO-4-Me-Amph	DOM ('STP')
3.2.7	2,5-DiMeO-4-Me-Amph-D6	DOM-D6
3.2.8	2,5-DiMeO-4-Et-Amph	DOET
3.2.9	2,5-DiMeO-4-Bu-Amph	DOBU
3.2.10	2,5-DiMeO-4-Pentyl-Amph	DOAM
3.2.11	2,5-DiMeO-4-F-Amph	DOF
3.2.12	2,5-DiMeO-4-Cl-Amph	DOC
3.2.13	2,5-DiMeO-4-Cl-Amph-D6	DOC-D6
3.2.14	2,5-DiMeO-4-Br-Amph	DOB ('Bromo-STP')
3.2.15	2,5-DiMeO-4-Br-Amph-D5	
3.2.16	2,5-DiMeO-4-Br-Amph-D6	DOB-D6
3.2.17	2,5-DiMeO-4-I-Amph	DOI
3.2.18	2,5-DiMeO-4-I-Amph-D6	DOI-D6
3.2.19	2,5-DiMeO-4-MeS-Amph	ALEPH
3.2.20	2,5-DiMeO-4-EtS-Amph	ALEPH-2
3.2.21	2,5-DiMeO-4-iPrS-Amph	ALEPH-4
3.2.22	2,5-DiMeO-4-NO2-Amph	DON
3.2.23	2,6-DiMeO-Amph	
3.2.24	3,4-DiMeO-Amph-NBOMe	
3.2.25	Trialkoxyamphetamines	
3.2.26	2,4,5-TriMeO-Amph	TMA-2
3.2.27	3,4,5-TriMeO-Amph	TMA

Ref	Substance	Other names
3.2.28	2,4,6-TriMeO-Amph	TMA-6
3.2.29	3,5-DiMeO-4-PrO-Amph	3C-P

3.3	N-Methyl Amphetamines	
3.3.1	Methamphetamine	N-Methylamphetamine
3.3.2	Methamphetamine-D3	
3.3.3	Methamphetamine-D5	
3.3.4	Methamphetamine-D6	
3.3.5	Methamphetamine-D8	
3.3.6	Methamphetamine-D9	
3.3.7	Methamphetamine-D11	
3.3.8	Methamphetamine-D14	
3.3.9	Methamphetamine- 13c-6 (13C in ring)	
3.3.10	S(+)-Methamphetamine	
3.3.11	S(+)-Methamphetamine-D3	
3.3.12	R(-)-Methamphetamine	
3.3.13	R(-)-Methamphetamine-D3	
3.3.14	2-Fl Methamphetamine	
3.3.15	2-Fl Methamphetamine-D5	
3.3.16	3-Fl Methamphetamine	
3.3.17	3-Fl Methamphetamine-D3	
3.3.18	4-Fl Methamphetamine	
3.3.19	4-Fl Methamphetamine-D3	
3.3.20	4-Fl Methamphetamine-D5 (on side chain)	
3.3.21	2-Cl Methamphetamine	
3.3.22	3-Cl Methamphetamine	
3.3.23	4-Cl Methamphetamine	
3.3.24	2-Br Methamphetamine	
3.3.25	3-Br Methamphetamine	
3.3.26	4-Br Methamphetamine	
3.3.27	2-Me Methamphetamine	
3.3.28	3-Me Methamphetamine	
3.3.29	4-Me Methamphetamine	
3.3.30	4-Me Methamphetamine-NBOMe	4-MMA-NBOMe
3.3.31	2-MeO Methamphetamine	Methoxyphenamine
3.3.32	3-MeO-Methamphetamine	
3.3.33	3-MeO-Methamphetamine-D3	
3.3.34	4-MeO-Methamphetamine	PMMA
3.3.35	4-MeO-Methamphetamine-D3	
3.3.36	4-MeO-Methamphetamine-13C6 (13C on ring)	
3.3.37	4-MeS-Methamphetamine	
3.3.38	4-HO-Methamphetamine	Pholedrine
3.3.39	3-CF3-methamphetamine	
3.3.40	2,5-DiMeO-Methamphet	2,5-DMMA

Ref	Substance	Other names
3.3.41	4-Br-2,5-DiMeO-Methamphet	4-Bromo-2,5-DMMA, 'MDOB'
3.3.42	3,4-DiMeO-Methamphetamine	3,4-DMMA
3.3.43	N,N-Dimethylamphetamine	
3.3.44	N,N-Dimethylamphetamine-D6	
3.3.45	(R)-N,N-Dimethylamphetamine	
3.3.46	(R)-N,N-Dimethylamphetamine-D6	
3.3.47	(S)-N,N-Dimethylamphetamine	
3.3.48	(S)-N,N-Dimethylamphetamine-D6	
3.3.49	N-tBOC-methamphetamine	
3.3.50	Mexedrone	3-MeO-2-MeAmino-1-(4-MePh)-propan-1-one

3.4	N-Ethyl Amphetamines	
3.4.1	N-Ethylamphetamine	Ethamphetamine
3.4.2	N-Ethylamphetamine-D5	
3.4.3	(R)-N-Ethylamphetamine	
3.4.4	(R)-N-Ethylamphetamine-D5	
3.4.5	(S)-N-Ethylamphetamine	
3.4.6	(S)-N-Ethylamphetamine-D5	
3.4.7	4-MeO-N-Ethylamphetamine	PMEA
3.4.8	4-MeO-N-Ethylamphetamine-D5	
3.4.9	4-Fluoro-N-ethylamphetamine	
3.4.10	3-Trifluoromethyl-N-ethylamphetamine	
3.4.11	N-(2-Cyanoethyl)amphetamine	Fenproporex
3.4.12	N-(2-Cyanoethyl)amphetamine-D6	
3.4.13	alpha-Ethylethamphetamine	2-Ethylamino-1-phenylbutane

3.5	Other Amphetamines	
3.5.1	N-Propylamphetamine	
3.5.2	N-Butylamphetamine	
3.5.3	N-Benzylamphetamine	Benzphetamine
3.5.4	N-Benzylamphetamine-D3	
3.5.5	(R)-N-Benzylamphetamine	
3.5.6	(R)-N-Benzylamphetamine-D3	
3.5.7	(S)-N-Benzylamphetamine	
3.5.8	(S)-N-Benzylamphetamine-D3	
3.5.9	1-(1-Benzylbutyl)pyrrolidine	Prolintane
3.5.10	N-Acetylamphetamine	
3.5.11	Lisdexamphetamine dimesylate	'Vyvanse'
3.5.12	Lisdexamphetamine dimesylate-D4	
3.5.13	Lidexamphetamine sulphate	

Ref	Substance	Other names
4.0	**Cathinones**	
4.1	**Beta-keto "2C-X" compounds**	
4.1.1	bk-2,5-DiMeO-4-Br-PEA	beta-keto 2C-B
4.2	**Cathinones**	
4.2.1	Cathinone	
4.2.2	Cathinone-D3	
4.2.3	Cathinone-D5	
4.2.4	S(-)-Cathinone	
4.2.5	S(-)-Cathinone-D3	
4.2.6	R(+)-Cathinone	
4.2.7	4-Methylcathinone	Normephedrone
4.2.8	4-MeO-cathinone	
4.2.9	3-Chlorocathinone	
4.2.10	2-Fluoroisocathinone	
4.3	**N-Methyl Cathinone and derivatives**	
4.3.1	Methcathinone	N-Methylcathinone, Ephedrone
4.3.2	Methcathinone-D3	
4.3.3	S(-)-Methcathinone	
4.3.4	R(+)-Methcathinone	
4.3.5	2-Methylmethcathinone	
4.3.6	2-Methylmethcathinone-D3	
4.3.7	3-Methylmethcathinone	
4.3.8	3-Methylmethcathinone-D3	
4.3.9	4-Methylmethcathinone	Mephedrone
4.3.10	4-Methylmethcathinone-D3	
4.3.11	4-Methylmethcathinone-13C6 (on benzene ring)	
4.3.12	4-Methyl-N-methoxymethcathinone	N-Methoxy mephedrone
4.3.13	2-Ethylmethcathinone	
4.3.14	3-Ethylmethcathinone	
4.3.15	4-Ethylmethcathinone	4-EMC
4.3.16	4-Ethylmethcathinone-D3	
4.3.17	2-Methoxymethcathinone	
4.3.18	3-Methoxymethcathinone	
4.3.19	4-Methoxymethcathinone	Methedrone
4.3.20	4-Methoxymethcathinone-D3	
4.3.21	2-Chloromethcathinone	
4.3.22	3-Chloromethcathinone	
4.3.23	4-Chloromethcathinone	Clephedrone
4.3.24	2-Fluoromethcathinone	
4.3.25	2-Fluoromethcathinone-D3	
4.3.26	3-Fluoromethcathinone	

Ref	Substance	Other names
4.3.27	3-Fluoromethcathinone-D3	
4.3.28	4-Fluoromethcathinone	Flephedrone
4.3.29	4-Fluoromethcathinone-D3	
4.3.30	2-Bromomethcathinone	
4.3.31	3-Bromomethcathinone	
4.3.32	4-Bromomethcathinone	Brephedrone
4.3.33	4-Hydroxymethcathinone	
4.3.34	3,4-Dimethoxymethcathinone	
4.3.35	2,3-Dimethylmethcathinone	
4.3.36	2,4-Dimethylmethcathinone	
4.3.37	3,4-Dimethylmethcathinone	3,4-DMMC
4.3.38	3,4-Dimethylmethcathinone-D3	
4.3.39	2,4,5-Trimethylmethcathinone	
4.3.40	N,N-Dimethylcathinone	Dimethylpropion, Metamfepramone
4.3.41	N,N-Dimethylcathinone-D6	
4.3.42	4-Methyl-N,N-dimethylcathinone	
4.3.43	4-Ethyl-N,N-dimethylcathinone	
4.3.44	4-Methoxy-N,N-dimethylcathinone	
4.3.45	2-Chloro-N,N-dimethylcathinone	
4.3.46	3-Chloro-N,N-dimethylcathinone	
4.3.47	4-Chloro-N,N-dimethylcathinone	
4.3.48	3,4-Dichloro-N,N-dimethylcathinone	
4.3.49	N-Ethyl-N-methylcathinone	
4.3.50	2-(Methylamino)-1-(thiophen-2-yl)propan-1-one (Thiothinone)	β-keto-MPA (Thiophene analogue of methcathinone)
4.3.51	1-(4-MePh)-2-Methylamino-3-MeO-propan-1-one	Mexedrone

4.4	N-Ethyl Cathinone and derivatives	
4.4.1	N-Ethylcathinone	Ethcathinone
4.4.2	N-Ethylcathinone-D5	
4.4.3	1-Ethylamino-1-phenyl-propan-2-one	iso-Ethcathinone
4.4.4	2-Methyl-N-ethylcathinone	2-MEC
4.4.5	3-Methyl-N-ethylcathinone	3-MEC
4.4.6	4-Methyl-N-ethylcathinone	4-MEC
4.4.7	4-Methyl-N-ethylcathinone-D5	
4.4.8	4-Bromoethcathinone	
4.4.9	2-Fluoroethcathinone	
4.4.10	3-Fluoroethcathinone	
4.4.11	4-Fluoroethcathinone	
4.4.12	2-Chloroethcathinone	
4.4.13	3-Chloroethcathinone	
4.4.14	4-Chloroethcathinone	
4.4.15	4-Chloroethcathinone-D3	
4.4.16	2-Ethyl-N-ethylcathinone	
4.4.17	3-Ethyl-N-ethylcathinone	

Ref	Substance	Other names
4.4.18	4-Ethyl-N-ethylcathinone	
4.4.19	2,3-Dimethyl-N-ethylcathinone	
4.4.20	2,4-Dimethyl-N-ethylcathinone	
4.4.21	3,4-Dimethyl-N-ethylcathinone	
4.4.22	N-Methyl-N-ethylcathinone	
4.4.23	N,N-Diethylcathinone	Diethylpropion, Amfepramone
4.4.24	N,N-Diethylcathinone-D10	
4.4.25	4-Me-N,N-diethylcathinone	
4.5	**N-Propyl Cathinones**	
4.5.1	4-Cl-N-iPr cathinone	
4.6	**N-Benzyl Cathinones**	
4.6.1	4-Methyl-N-benzylcathinone	Benzedrone
4.6.2	4,N-Dimethyl-benzylcathinone	N-Methyl benzedrone
4.7	**Simple Butanones**	
4.7.1	2-(Methylamino)-1-phenylbutan-1-one	Buphedrone
4.7.2	2-(Methylamino)-1-phenylbutan-1-one-D3	
4.7.3	4-Fluorobuphedrone	
4.7.4	2-(Methylamino)-1-(3-methylphenyl)butan-1-on	3-Methylbuphedrone
4.7.5	2-(Methylamino)-1-(4-methylphenyl)butan-1-one	4-Methylbuphedrone, 4-MeMABP
4.7.6	2-(Methylamino)-1-(4-methylphenyl)butan-1-one-D3	
4.7.7	2-Amino-1-(4-fluorophenyl)butan-1-one	
4.7.8	2-(N,N-Dimethylamino)-1-phenylbutan-1-one	
4.7.9	2-(N,N-Dimethylamino)-1-(4-methylphenyl)butan-1-one	4-Methyl-N-methylbuphedrone
4.7.10	2-(Ethylamino)-1-phenylbutan-1-one	N-Ethylbuphedrone, NEB
4.7.11	2-(Ethylamino)-1-(4-methylphenyl)butan-1-one	
4.8	**Simple Pentanones**	
4.8.1	2-Amino-1-phenylpentan-1-one	Norpentedrone
4.8.2	2-(Methylamino)-1-phenylpentan-1-one	Pentedrone, β-Ethylmethcathinone
4.8.3	1-(Methylamino)-1-phenylpentan-2-one	Isopentedrone
4.8.4	2-(Methylamino)-1-(4-Fl-phenyl)pentan-1-one	4-Fluoropentedrone
4.8.5	2-(Methylamino)-1-(4-Cl-phenyl)pentan-1-one	4-Chloropentedrone
4.8.6	2-(Methylamino)-1-(4-Me-phenyl)pentan-1-one	4-Methylpentedrone
4.8.7	2-(Methylamino)-1-(4-Et-phenyl)pentan-1-one	4-Ethylpentedrone
4.8.8	2-(Dimethylamino)-1-phenylpentan-1-one	
4.8.9	2-(Ethylamino)-1-phenylpentan-1-one	N-Ethyl pentedrone
4.8.10	2-(Ethylamino)-1-(4-Me-phenyl)pentan-1-one	4-Me-N-Ethyl pentedrone
4.8.11	2-(Ethylamino)-1-(4-MeO-phenyl)pentan-1-one	4-MeO-N-Ethyl pentedrone
4.8.12	2-(Ethylamino)-1-(3,4-dimethylphenyl)pentan-1-one	
4.8.13	2-(Ethylamino)-1-(3,4-dimethoxyphenyl)pentan-1-one	DL-4662
4.8.14	2-(Propylamino)-1-phenylpentan-1-one	

Ref	Substance	Other names
4.8.15	2-(Isopropylamino)-1-phenylpentan-1-one	NiPP
4.8.16	2-(Isopropylamino)-1-(4F-phenyl)pentan-1-one	4F-iPV
4.9	**Simple Hexanones**	
4.9.1	2-(Methylamino)-1-phenyl-hexan-1-one	Hexedrone
4.9.2	2-(Methylamino)-1-(4-methylphenyl)hexan-1-one	4'-Methylhexedrone
4.9.3	2-(Ethylamino)-1-phenyl-hexan-1-one	N-Ethyl hexedrone
4.10	**Other Simple Cathinones**	
4.10.1	2-tert-Butyl-1-(3-chlorophenyl)propan-1-one	Bupropion
4.10.2	2-tert-Butyl-1-(3-chlorophenyl)propan-1-one-D9	
4.11	**Methylenedioxycathinones (C3 to C5 sidechains)**	
4.11.1	**C3**	
4.11.1.1	3,4-Methylenedioxycathinone	
4.11.1.2	3,4-Methylenedioxycathinone-D3	
4.11.1.3	2,3-Methylenedioxy-N-methylcathinone	
4.11.1.4	3,4-Methylenedioxy-N-methylcathinone	Methylone (β-keto-MDMA)
4.11.1.5	3,4-Methylenedioxy-N-methylcathinone-D3	
4.11.1.6	3,4-Methylenedioxy-5-methoxy-N-methylcathinone	5-Methoxymethylone
4.11.1.7	3,4-Methylenedioxy-6-methoxy-N-methylcathinone	6-Methoxymethylone
4.11.1.8	3,4-Methylenedioxy-N-ethylcathinone	Ethylone (β-keto-MDEA)
4.11.1.9	3,4-Methylenedioxy-N-ethylcathinone-D5	
4.11.1.10	3,4-Methylenedioxy-N-ethylcathinone (polymorph B)	Ethylone (polymorph B)
4.11.1.11	3,4-Methylenedioxy-5-methyl-N-ethylcathinone	R-MMC
4.11.1.12	3,4-Methylenedioxy-N-propylcathinone	
4.11.1.13	3,4-Methylenedioxy-N-isopropylcathinone	
4.11.1.14	3,4-Methlenedioxy-N-tert-butylcathinone	
4.11.1.15	1-(3,4-Methylenedioxyphenyl)-2-(N,N-dimethylamino)propan-1-one	Dimethylone (β-keto-MDDMA)
4.11.1.16	1-(3,4-Methylenedioxyphenyl)-2-(N-methyl-N-ethylamino) propan-1-one	N-Me ethylone
4.11.1.17	1-(3,4-Methylenedioxyphenyl)-2-(N,N-diethylamino)propan-1-one	Diethylone
4.11.1.18	3,4-Methylenedioxy-N-Acetyl-methcathinone	
4.11.1.19	3,4-Methylenedioxy-N-benzylcathinone	BMDP, Methylenedioxybenzedrone
4.11.2	**C4**	
4.11.2.1	1-(3,4-Methylenedioxyphenyl)-2-amino-butan-1-one	BDB
4.11.2.2	1-(3,4-Methylenedioxyphenyl)-2-(methylamino)-butan-1-one	Butylone (β-keto-MBDB)
4.11.2.3	1-(3,4-Methylenedioxyphenyl)-2-(methylamino)-butan-1-one-D3	
4.11.2.4	1-(3,4-Methylenedioxyphenyl)-2-(N,N-dimethylamino)butan-1-one	Dibutylone (β-keto-MMBDB)
4.11.2.5	1-(3,4-Methylenedioxyphenyl)-2-(N,N-dimethylamino)butan-1-one-D3	

Ref	Substance	Other names
4.11.2.6	1-(3,4-Methylenedioxyphenyl)-2-(N,N-dimethylamino)butan-1-one-D6	
4.11.2.7	1-(3,4-Methylenedioxyophenyl)-2-(ethylamino)butan-1-one	Eutylone
4.11.2.8	1-(3,4-Methylenedioxyophenyl)-2-(ethylamino)butan-1-one-D5	
4.11.2.9	1-(3,4-Methylenedioxyphenyl)-2-(N-methylamino)-3-Me-butan-1-one	
4.11.2.10	1-(3,4-Methylenedioxyphenyl)-2-(N,N-dimethylamino)-3-Me-butan-1-one	
4.11.2.11	1-(3,4-Methylenedioxyophenyl)-2-(ethylamino)-3-Me-butan-1-one	
4.11.2.12	N-Benzyl-(3,4-MDO)-2-aminobutan-1-one	BMDB, N-Benzylnorbutylone
4.11.2.13	1-Indenyl-2-ethylamino-butan-1-one	bk-EABDI
4.11.3	**C5**	
4.11.3.1	1-(1,3-Benzodioxol-5-yl)-2-(methylamino)pentan-1-one	Pentylone (β-keto-MBDP)
4.11.3.2	1-(1,3-Benzodioxol-5-yl)-2-(dimethylamino)pentan-1-one	N,N-Dimethylpentylone, Dipentylone
4.11.3.3	1-(1,3-Benzodioxol-5-yl)-2-(ethylamino)pentan-1-one	N-Ethylpentylone
4.11.3.4	1-(1,3-Benzodioxol-5-yl)-2-(ethylamino)pentan-1-one-D5	
4.11.3.5	1-(1,3-Benzodioxol-5-yl)-2-(diethylamino)pentan-1-one	N,N-Diethylpentylone
4.11.4	**C6**	
4.11.4.1	1-(1,3-Benzodioxol-5-yl)-2-(ethylamino)hexan-1-one	N-Ethylhexadrone
4.11.4.2	**Ethylenedioxycathinones**	
4.11.4.3	3,4-Ethylenedioxy-N-methylcathinone	Analogue of methylone

4.12	**Pyrrolidinocathinones (C3 to C8 sidechains)**	
4.12.1	**C3**	
4.12.1.1	alpha-Pyrrolidinopropiophenone	α-PPP
4.12.1.2	alpha-Pyrrolidinopropiophenone-D5	
4.12.1.3	2-Methyl-alpha-pyrrolidinopropiophenone	
4.12.1.4	3-Methyl-alpha-pyrrolidinopropiophenone	
4.12.1.5	4-Methyl-alpha-pyrrolidinopropiophenone	MPPP
4.12.1.6	4-Methyl-alpha-pyrrolidinopropiophenone-D8	
4.12.1.7	4-Methoxy-alpha-pyrrolidinopropiophenone	
4.12.1.8	4-Methoxy-alpha-pyrrolidinopropiophenone-D8	
4.12.1.9	4-Chloro-alpha-pyrrolidinopropiophenone	
4.12.1.10	3-Fluoro-alpha-pyrrolidinopropiophenone	
4.12.1.11	4-Fluoro-alpha-pyrrolidinopropiophenone	
4.12.1.12	4'-MeS-2-morpholino-2-methylpropiophenone	Irgacure 907, Caccure 907
4.12.2	**C4**	
4.12.2.1	alpha-Pyrrolidinobutiophenone	α-PBP
4.12.2.2	alpha-Pyrrolidinobutiophenone-D8	
4.12.2.3	2-Methyl-alpha-pyrrolidinobutiophenone	
4.12.2.4	3-Methyl-alpha-pyrrolidinobutiophenone	
4.12.2.5	4-Methyl-alpha-pyrrolidinobutiophenone	MPBP
4.12.2.6	4-Methoxy-alpha-pyrrolidinobutiophenone	
4.12.2.7	4-Fluoro-alpha-pyrrolidonobutiophenone	4F-PBP

Ref	Substance	Other names
4.12.2.8	alpha-Piperidinobutiophenone	
4.12.2.9	alpha-Pyrrolidinobutiothiophenone	α-PBT (thiophene analogue of α-PBP)
4.12.3	**C5**	
4.12.3.1	1-Phenyl-2-(1-pyrrolidinyl)-pentan-1-one	Pyrrolidinovalerophenone, α-PVP
4.12.3.2	1-Phenyl-2-(1-pyrrolidinyl)-pentan-1-one-D8	
4.12.3.3	1-(4-Methylphenyl)-2-(1-pyrrolidinyl)-pentan-1-one	Pyrovalerone
4.12.3.4	Pyrovalerone-D8	
4.12.3.5	3-Fluoro-alpha-pyrrolidinopentiophenone	3-Fl- α-PVP
4.12.3.6	4-Fluoro-alpha-pyrrolidinopentiophenone	4-Fl- α-PVP
4.12.3.7	4-Chloro-alpha-pyrrolidinopentiophenone	4-Cl- α-PVP
4.12.3.8	4-Methoxy-alpha-pyrrolidinopentiophenone	MOPPP
4.12.3.9	3,4-Dimethoxy-alpha-pyrrolidinopentiophenone	3,4 DiMeO α-PVP
4.12.3.10	3,4-Dimethyl-alpha-pyrrolidinopentiophenone	3,4 DiMe α-PVP
4.12.4	**C6**	
4.12.4.1	alpha-Pyrrolidinohexanophenone	α-PHP
4.12.4.2	alpha-Pyrrolidinoisohexanophenone	α-PiHP
4.12.4.3	4-Methyl-alpha-pyrrolidinohexanophenone	MPHP
4.12.4.4	4-Methyl-alpha-pyrrolidinohexanophenone-D8	
4.12.4.5	4-Fluoro-alpha-pyrrolidinohexanophenone	4F-PHP, 4F-PV7
4.12.4.6	4-Chloro-alpha-pyrrolidinohexanophenone	
4.12.4.7	3,4-Dimethoxy-alpha-pyrrolidinohexanophenone	
4.12.5	**C7**	
4.12.5.1	1-Phenyl-2-(1-pyrrolidinyl)-heptan-1-one	PV8
4.12.5.2	1-(4-Fl-phenyl)-2-(1-pyrrolidinyl)-heptan-1-one	4-Fl-PV8
4.12.5.3	1-(4-Me-phenyl-2-(1-pyrrolidinyl)-heptan-1-one	4-Me-PV8
4.12.5.4	1-(4-MeO-phenyl-2-(1-pyrrolidinyl)-heptan-1-one	4-MeO-PV8
4.12.6	**C8**	
4.12.6.1	1-Phenyl-2-(1-pyrrolidinyl)-octan-1-one	PV9
4.12.6.2	1-(4-Fl-phenyl)-2-(1-pyrrolidinyl)-octan-1-one	4-Fl-PV9
4.12.6.3	1-(4-MeO-phenyl)-2-(1-pyrrolidinyl)-octan-1-one	4-MeO-PV9
4.12.7	**C9**	
4.12.7.1	1-Phenyl-2-(1-pyrrolidinyl)-nonan-1-one	α-PNP
4.12.7.2	alpha-Pyrrolidinopentiothiophenone	α-PVT (thiophene analogue of pyrovalerone)

4.13	**Methylenedioxypyrrolidinocathinones**	
4.13.1	**C3**	
4.13.1.1	3,4-Methylenedioxyphenyl-alpha-pyrrolidinopropiophenone	MDPPP
4.13.1.2	3,4-Methylenedioxyphenyl-alpha-pyrrolidinopropiophe-none-D-8	
4.13.2	**C4**	
4.13.2.1	3,4-Methylenedioxyphenyl-alpha-pyrrolidinobutiophenone	MDPBP
4.13.2.2	3,4-Methylenedioxyphenyl-alpha-pyrrolidinobutiophe-none-D8	

Ref	Substance	Other names
4.13.3	**C5**	
4.13.3.1	Methylenedioxypyrovalerone (HCl)	MDPV
4.13.3.2	(-)-Methylenedioxypyrovalerone	
4.13.3.3	(+)-Methylenedioxypyrovalerone	
4.13.3.4	Methylenedioxypyrovalerone (free base)	
4.13.3.5	Methylenedioxypyrovalerone-D8	
4.13.3.6	2,3-Methylenedioxypyrovalerone	
4.13.3.7	1-(2,3-Dihydrobenzofuran-5-yl)-2-(pyrrolidin-1-yl)pentan-1-one	5-DBFPV, 3-Desoxy MDPV
4.13.4	**C6**	
4.13.4.1	3,4-Methylenedioxyphenyl-alpha-pyrrolidinohexanophenone	3,4-MDPHP
4.13.5	**C7**	
4.13.5.1	3,4-Methylenedioxyphenyl-alpha-pyrrolidinoheptanophenone	3,4-MDO-PV8
4.13.6	**C8**	
4.13.6.1	3,4-Methylenedioxyphenyl-alpha-pyrrolidinooctanophenone	3,4-MDO-PV9
4.14	**Naphthyl cathinones**	
4.14.1	2-(Methylamino)-1-(naphthalen-2-yl)pentan-2-one	"NRG3", Naphthyl analogue of pentylone
4.15	**Naphthyl pyrrolidinocathinones**	
4.15.1	1-Naphthylpyrovalerone	1-Naphyrone
4.15.2	2-Naphthylpyrovalerone	2-Naphyrone
4.15.3	2-Naphthylpyrovalerone-D5	
4.15.4	2-Naphthylpyrovalerone-D8	
4.16	**Tetrahydronaphthyl pyrrolidinocathinones**	
4.16.1	3',4'-Tetramethylene-α-pyrrolidinobutiophenone	TH-PBP
4.16.2	3',4'-Tetramethylene-α-pyrrolidinovalerophenone	TH-PVP, 3',4'-tetramethylenenaphyrone
4.17	**Indanyl analogues of cathinones**	
4.17.1	Indanyl-pentedrone	
4.17.2	Indanyl-N-Et-buphedrone	βk-IBP
4.17.3	Indanyl-N-Et-pentedrone	βk-IVP
4.17.4	Indanyl-α-PBP	5-PPDi
4.17.5	Indanyl-α-PVP	
4.17.6	Indanyl-α-PHP	5-BPDi
4.17.7	Indanyl-α-PBP	
4.18	**Related materials**	
4.18.1	α-Phthalimidopropiophenone	

Ref	Parent compound	Metabolite
5.0	**Metabolites of Cathinones**	
5.1	**Mephedrone**	
5.1.1		Nor-mephedrone
5.1.2		4-Methylephedrine
5.1.3		4-Methylephedrine-D3
5.1.4		4-Methylpseudoephedrine
5.1.5		4-Carboxymephedroneg
5.1.6		4-Hysroxytolylmephedrone
5.2	**Methedrone**	
5.2.1		4-Methoxypseudoephedrine
5.3	**Ethcathinone**	
5.3.1		N-Ethylnorephedrine
5.3.2		N-Ethylnorephedrine-D5
5.4	**3,4-Dimethylmethcathinone**	
5.4.1		3,4-Dimethylephedrine
5.4.2		3,4-Dimethylpseudoephedrine
5.4.3		3,4-Dimethylnorephedrine
5.4.4		3,4-Dimethylnorephedrine-D4
5.5	**4-MEC**	
5.5.1		4-Methyl-N-ethylnorephedrine
5.5.1		4-Methyl-N-ethylnorephedrine-D5
5.5.1		4-Methyl-N-ethylpseudoephedrine
5.5.1		4-Methyl-N-ethylephedrine
5.6	**Flephedrone**	
5.6.1		4-Fluoroephedrine
5.6.2		4-Fluoroephedrine-D3
5.7.3		4-Fluoropseudoephedrine
5.7	**4-EMC**	
5.7.1		4-Ethylephedrine
5.8	**Buphedrone**	
5.8.1		Buphedrine
5.8.2		Buphedrine-D3
5.8.3		Pseudobuphedrine

Ref	Parent compound	Metabolite
5.9	**Pentedrone**	
5.9.1		2-(Methylamino)-1-phenylpentan-1-ol
5.9.2		(as above, ephedrine stereochemistry)
5.9.3		Norephedrine metab
5.9.4		Norephedrine metab- D5
5.10	**alpha-PVP**	
5.10.1		1-Phenyl-2-(pyrollidin-1-yl)pentan-1-ol
5.11	**MDPV**	
5.11.1		3-Methoxy-4-hydroxypyrovalerone
5.11.2		3,4-Dihydroxypyrovalerone
5.12	**Bupropion**	
5.12.1		Hydroxybupropion

6.0 Tryptamines

Ref	Substance	Other names
6.1	**Tryptamine**	
6.1.1	Tryptamine-D4	
6.1.2	alpha-Alkyl Tryptamines	
6.1.3	alpha-Methyltryptamine	AMT
6.1.4	5-Methoxy-alpha-methyltryptamine	5-MeO-AMT
6.1.5	N-Hydroxy-alpha-methyltryptamine	
6.1.6	alpha-Ethyltryptamine	AET
6.1.7	4-Methyl-alpha-ethyltryptamine	
6.1.8	5-Methoxy-alpha-ethyltryptamine	5-MeO-AET
6.1.9	N-Alkyl Tryptamines	
6.1.10	N-Methyltryptamine	
6.1.11	N-Methyltryptamine-D3	
6.1.12	N,N-Dimethyltryptamine	DMT
6.1.13	N,N-Dimethyltryptamine-D4	
6.1.14	N,N-Dimethyltryptamine-N-oxide	
6.1.15	N-Methyl-N-ethyltryptamine	
6.1.16	N-Methyl-N-isopropyltryptamine	
6.1.17	N,N-Diethyltryptamine	DET
6.1.18	N,N-Dipropyltryptamine	DPT
6.1.19	N,N-Dipropyltryptamine-D4	
6.1.20	N,N-Diisopropyltryptamine	DiPT
6.1.21	N,N-Diisopropyltryptamine-D4	
6.1.22	N,N-Diisobutyltryptamine	DiBT

Ref	Substance	Other names
6.1.23	N,N-Diallyltryptamine	DALT
6.1.24	RU-28306	DMT with α-carbon linked back to phenyl ring

6.2	Ring-Methoxy N-Alkyl Tryptamines	
6.2.1	4-Methoxy-N,N-dimethyltryptamine	4-MeO-DMT
6.2.2	4-Methoxy-N,N-dimethyltryptamine-D4	
6.2.3	4-Methoxy-N,N-diisopropyltryptamine	
6.2.4	5-Methoxytryptamine	
6.2.5	5-Methoxy-N,N-dimethyltryptamine	5-MeO-DMT
6.2.6	5-Methoxy-N,N-diethyltryptamine	
6.2.7	5-Methoxy-N-isopropyltryptamine	Foxy, 5-MeO-DiPT
6.2.8	5-Methoxy-N-isopropyltryptamine-D4	
6.2.9	5-Methoxy-N-methyl-N-isopropyltryptamine	5-MeO-MiPT
6.2.10	5-Methoxy-N-ethyl-N-isopropyltryptamine	
6.2.11	5-Methoxy-N-ethyl-N-propyltryptamine	
6.2.12	5-Methoxy-N,N-dipropyltryptamine	
6.2.13	5-Methoxy-N,N-diisopropyltryptamine	Foxy methoxy, 5-MeO-DiPT
6.2.14	5-Methoxy-N,N-diisopropyltryptamine-D4	
6.2.15	5-Methoxy-N,N-diisopropylbenzofuran	5-MeO-DIBF (5-MeO-DiPT benzofuran analogue)
6.2.16	5-Methoxy-N,N-diallyltryptamine	5-MeO-DALT
6.2.17	6-Methoxy-N,N-diisopropyltryptamine	
6.2.18	7-Methoxy-N,N-diisopropyltryptamine	

6.3	Ring-Hydroxy N-Alkyl Tryptamines	
6.3.1	4-Hydroxy-N,N-dimethyltryptamine	Psilocin
6.3.2	4-Hydroxy-N,N-dimethyltryptamine-D4	
6.3.3	4-Hydroxy-N,N-dimethyltryptamine-D10	
6.3.4	4-Hydroxy-N-methyl-N-ethyltryptamine	4-HO-MET, Metocin
6.3.5	4-Hydroxy-N-methyl-N-ethyltryptamine-D4	
6.3.6	4-Hydroxy-N,N-diethyltryptamine	4-HO-DET
6.3.7	4-Hydroxy-N,N-diethyltryptamine-D4	
6.3.8	4-Hydroxy-N-methyl-N-isopropyltryptamine	4-HO-MiPT
6.3.9	4-Hydroxy-N-methyl-N-isopropyltryptamine-D4	
6.3.10	4-Hydroxy-N,N-dipropyltryptamine	4-HO-DPT
6.3.11	4-Hydroxy-N,N-diisopropyltryptamine	4-HO-DiPT
6.3.12	5-Hydroxy-N,N-dimethyltryptamine	5-HO-DMT, Bufotenine
6.3.13	5-Hydroxy-N,N-dimethyltryptamine-D4	

6.4	Ring-Acetoxy N-Alkyl Tryptamines	
6.4.1	4-Acetoxy-N,N-dimethyltryptamine	O-Acetylpsilocin, 4-AcO-DMT
6.4.2	4-Acetoxy-N,N-dimethyltryptamine-D4	
6.4.3	4-Acetoxy-N-methyl-N-ethyltryptamine	4-AcO-MET
6.4.4	4-Acetoxy-N,N-diethyltryptamine	4-AcO-DET

Ref	Substance	Other names
6.4.5	4-Acetoxy-N,N-dipropyltryptamine	4-AcO-DPT
6.4.6	4-Acetoxy-N,N-diisopropyltryptamine	4-AcO-DiPT, Ipracetin

6.5	Other mushroom hallucinogens	
6.5.1	4-Phosphoryloxy-tryptamine	Norbaeocystin
6.5.2	4-Phosphoryloxy-N-methyltryptamine	Baeocystin
6.5.3	4-Phosphoryloxy-N,N-dimethyltryptamine	Psilocybin
6.5.4	4-Phosphoryloxy-N,N-dimethyltryptamine-D4	
6.5.5	4-Phosphoryloxy-N,N,N-trimethyltryptamine	Aeruginascin

6.6	Lysergamide and related materials	
6.6.1	Lysergic acid	
6.6.2	Lysergic acid amide	Ergine
6.6.3	Lysergic acid N,N-diethylamide	LSD
6.6.4	Lysergic acid N,N-diethylamide-D3	
6.6.5	Lysergic acid N,N-diethylamide-D10	
6.6.6	Lysergic acid N-methyl-N-propylamide	LAMPA
6.6.7	Lysergic acid ethylisopropylamide	EiPLA
6.6.8	iso-LSD	
6.6.9	iso-LSD-D10	
6.6.10	nor-LSD	
6.6.11	1-Propionyl LSD	1P-LSD
6.6.12	2-Bromo-lysergic acid N,N-diethylamide	BOL-148
6.6.13	2-Oxo-3-hydroxy-LSD	
6.6.14	Lysergic acid 2,4-dimethylazetide	LSZ
6.6.15	Lysergic acid 2,4-dimethylazetide-D3	
6.6.16	Lysergol	
6.6.17	N-Pyrrolidyllysergamide	LPD-824
6.6.18	N-Morpholinyllysergamide	LSM-775

6.7	Related compounds	
6.7.1	Ergotamine	
6.7.2	Ergonovine	Ergometrine
6.7.3	Harmaline	
6.7.4	Harmine	

Ref	Substance	Other names
7.0	**Piperazines**	
7.1	**Benzylpiperazines**	
7.1.1	Benzylpiperazine	BZP
7.1.2	Benzylpiperazine-D7	
7.1.3	Benzylpiperazine-D8	
7.1.4	1-Benzyl-2-methylpiperazine	
7.1.5	1-Benzyl-3-methylpiperazine	3-MBZP
7.1.6	1-Benzyl-4-methylpiperazine	MBZP
7.1.7	1-(4-Fluorobenzyl)piperazine	
7.1.8	1-(3-Me-benzyl)piperazine	
7.1.9	1-(2,5-Dimethoxybenzyl)piperazine	2C-H BZP
7.1.10	1-(2,5-Dimethoxy-4-bromobenzyl)piperazine	2C-B-BZP
7.1.11	1-(2,3,4-Trimethoxybenzyl)piperazine	Trimetazedine
7.1.12	3,4-Methylenedioxybenzylpiperazine	1-Piperonylpiperazine
7.1.13	1,4-Dibenzylpiperazine	N,N-Dibenzylpiperazine, DBZP
7.1.14	Benzoylpiperazine	
7.1.15	Benzoylpiperazine-D8	
7.1.16	2-Benzylpiperazine	2-BZP
7.1.17	1-Me-3-BZP	4-Me-2-BZP

7.2	**Phenylpiperazines**	
7.2.1	Phenylpiperazine	
7.2.2	Phenylpiperazine-D4	
7.2.3	1-(2-Chlorophenyl)piperazine	oCPP
7.2.4	1-(3-Chlorophenyl)piperazine	mCPP
7.2.5	1-(3-Chlorophenyl)piperazine-D6	
7.2.6	1-(4-Chlorophenyl)piperazine	pCPP
7.2.7	1-(2-Fluorophenyl)piperazine	
7.2.8	1-(3-Fluorophenyl)piperazine	
7.2.9	1-(4-Fluorophenyl)piperazine	
7.2.10	1-(2-Trifluoromethyl)phenylpiperazine	o-TFMPP
7.2.11	1-(3-Trifluoromethyl)phenylpiperazine	m-TFMPP
7.2.12	1-(4-Trifluoromethyl)phenylpiperazine	p-TFMPP
7.2.13	1-(2-Methoxyphenyl)piperazine	2-MeOPP
7.2.14	1-(2-Methoxyphenyl)piperazine-D8	
7.2.15	1-(3-Methoxyphenyl)piperazine	3-MeOPP
7.2.16	1-(4-Methoxyphenyl)piperazine	4-MeOPP
7.2.17	1-(2,3-Dichlorophenyl)piperazine	
7.2.18	2-(4-Fluorophenyl)piperazine	
7.2.19	2-(3-Trifluoromethylphenyl)piperazine	

Synthetic Cannabinoids

Organisation of our listing of available reference standards

Most synthetic cannabinoids have structures made up from four major components – a core, a tail, a bridge and a secondary structure. Our listing of available standards divides the synthetic cannabinoids firstly according to their core structure and, where thereare a great many variants, further sub-divides them according to their secondarystructures, as set out in the 'Contents' listing on page 4.

Trivial Nomenclature of Synthetic Cannabinoids

Many of the original synthetic cannabinoids that made an appearance on the market in the early 2000s came from the publication of pharmaceutical research that was conducted initially in the 20th century.

The trivial nomenclature of these compounds stems from this research:

JWH (products synthesized by **J**ohn. **W**. **H**uffman of Clemson University in the USA)

HU (products synthesized by Professor Raphael Mechoulam at the **H**ebrew **U**niversity in Jerusalem)

CP (created by Pfizer)

WIN (products developed by former US pharmaceutical company, Sterling **Win**throp)

AM (products synthesised by **A**lexandros **M**akriyannis at Northeastern University, USA. Many are halogenated JWH compounds)

UR (produced by American pharmaceutical company Abbott Laboratories).

The 'third generation' of synthetic cannabinoids which currently dominate the market are often referred to using trivial names which are a combination of abbreviations for their four component parts.

These abbreviations are arranged in the sequence:

(secondary structure) +(tail)+(core) +(bridge) to produce names such as 'QUPIC' (**qu**inolinyl secondary structure)+(**p**entyl tail)+(**i**ndole core) +(**c**arboxylate bridge) and 'AB-FUBINACA' (1-amino-3-methylbutan-1-one secondary structure)+(4-fluorobenzyl tail) +(indazole core)+(carboxamide bridge).

Ref	Substance	Other names
8.0	**Synthetic Cannabinoids**	
	(1) Pyrrole core	
8.1	**Naphthoyl pyrroles**	
8.1.1	1-Pentyl-3-naphthoylpyrrole	JWH-030
8.1.2	1-Hexyl-3-naphthoylpyrrole	JWH-031
8.1.3	1-Pentyl-5-phenyl-3-naphthoylpyrrole	JWH-145
8.1.4	1-Heptyl-5-phenyl-3-naphthoylpyrrole	JWH-146
8.1.5	1-Hexyl-5-phenyl-3-naphthoylpyrrole	JWH-147
8.1.6	1-Hexyl-5-phenyl-3-naphthoylpyrrole-D5	
8.1.7	1-Pentyl-2-methyl-3(4-methylnaphthoyl)pyrrole	JWH-149
8.1.8	1-Pentyl-5-(2-fluorophenyl)-3-naphthoylpyrrole	JWH-307
8.1.9	1-Pentyl-4-(2-fluorophenyl)-3-naphthoylpyrrole	JWH-307 3' isomer
8.1.10	1-Pentyl-5-(4-fluorophenyl)-3-nephthoylpyrrple	JWH-308
8.1.11	1-Pentyl-5-naphthyl-3-naphthoylpyrrole	JWH-309
8.1.12	1-Pentyl-5-(3-fluorophenyl)-3-naphthoylpyrrole	JWH-368
8.1.13	1-Pentyl-5-(2-chlorophenyl)-3-naphthoylpyrrole	JWH-369
8.1.14	1-Pentyl-5-(2-methylphenyl)-3-naphthoylpyrrole	JWH-370

	(2) Indene core	
8.2	**Naphthyl indenes**	
8.2.1	1-((3-Pentylindenylidene)methyl)naphthylene	JWH-176

	(3) Indole core	
8.3	**Naphthoyl indoles**	
8.3.1	3-(1-Naphthoyl)indole	
8.3.2	1-Pentylindole	
8.3.3	1-(5-Fluoropentyl)indole	
8.3.4	1-Cyclohexylmethylindole	
8.3.5	1-Pentyl-2-methyl-3-(1-naphthoyl)indole	JWH-007
8.3.6	1-Pentyl-2-methyl-3-(1-naphthoyl)indole-D9	
8.3.7	1-(1-Methylhexyl)-2-methyl-3-(1-naphthoyl)indole	JWH-011
8.3.8	1-Propyl-2-methyl-3-(1-naphthoyl)indole	JWH-015
8.3.9	1-Propyl-2-methyl-3-(1-naphthoyl)indole-D7	
8.3.10	1-Butyl-2-methyl-3-(1-naphthoyl)indole	JWH-016
8.3.11	1-Butyl-2-methyl-3-(1-naphthoyl)indole-D9	
8.3.12	1-Pentyl-3-(1-naphthoyl)indole	JWH-018, AM-678
8.3.13	1-Pentyl-3-(1-naphthoyl)indole-D9	
8.3.14	1-Pentyl-3-(1-naphthoyl)indole-D11	
8.3.15	1-Pentyl-3-(2-naphthoyl)indole	JWH-018 2-naphthyl isomer
8.3.16	1-Pentyl-6-methoxy -3-(1-naphthoyl)indole	JWH-018 (6-methoxy homologue)
8.3.17	1-(1-Methylhexyl)-3-(1-naphthoyl)indole	JWH-018 (1-methylhexyl homologue)
8.3.18	1-Hexyl-3-(1-naphthoyl)indole	JWH-019
8.3.19	1-Hexyl-3-(1-naphthoyl)indole-D13	

Ref	Substance	Other names
8.3.20	1-(2-Fl-hexyl)-3-(1-naphthoyl)indole	JWH-019 2-Fl-hexyl isomer
8.3.21	1-(3-Fl-hexyl)-3-(1-naphthoyl)indole	JWH-019 3-Fl-hexyl isomer
8.3.22	1-(4-Fl-hexyl)-3-(1-naphthoyl)indole	JWH-019 4-Fl-hexyl isomer
8.3.23	1-(5-Fl-hexyl)-3-(1-naphthoyl)indole	JWH-019 5-Fl-hexyl isomer
8.3.24	1-(6-Fl-hexyl)-3-(1-naphthoyl)indole	JWH-019 6-Fl-hexyl isomer
8.3.25	1-Heptyl-3-(1-naphthoyl)indole	JWH-020
8.3.26	1-Naphthalenyl-(1-(4-pentan-1-yl)-1H-indole-3yl) methanone	JWH-022
8.3.27	1-Ethyl-3-(1-naphthoyl)indole	JWH-071
8.3.28	1-Propyl-3-(1-naphthoyl)indole	JWH-072
8.3.29	1-Propyl-3-(1-naphthoyl)indole-D7	
8.3.30	1-Butyl-3-(1-naphthoyl)indole	JWH-073
8.3.31	1-Butyl-3-(1-naphthoyl)indole-D7	
8.3.32	1-Butyl-3-(1-naphthoyl)indole-D9	
8.3.33	1-Butyl-3-(2-naphthoyl)indole	JWH-073 2-naphthyl isomer
8.3.34	1-Butyl-3-(6-methoxynaphthoyl)indole	JWH-073 (6-methoxy analogue)
8.3.35	1-(2-Methylbutyl)-(1-naphthoyl)indole	JWH-073 (2-methylbutyl analogue)
8.3.36	1-(3-Methylbutyl)-(1-naphthoyl)indole	JWH-073 (3-methylbutyl analogue)
8.3.37	1-Butyl-3-(1-(2-methyl)naphthoyl)indole	JWH-073 (2-methylnaphthoyl analogue)
8.3.38	1-Butyl-3-(1-(4-methyl)naphthoyl)indole	JWH-073 (4-methylnaphthoyl analogue)
8.3.39	1-Butyl-3-(4-methoxynaphthoyl)indole	JWH-080
8.3.40	1-Butyl-3-(4-methoxynaphthoyl)indole-D9	
8.3.41	1-Pentyl-3-(4-methoxynaphthoyl)indole	JWH-081
8.3.42	1-Pentyl-3-(4-methoxynaphthoyl)indole-D9	
8.3.43	1-Pentyl-3-(4-methoxynaphthoyl)indole-D11	
8.3.44	1-Pentyl-3-(2-methoxynaphthoyl)indole	JWH-081 2-methoxynaphthyl isomer
8.3.45	1-Pentyl-3-(3-methoxynaphthoyl)indole	JWH-081 3-methoxynaphthyl isomer
8.3.46	1-Pentyl-3-(5-methoxynaphthoyl)indole	JWH-081 5-methoxynaphthyl isomer
8.3.47	1-Pentyl-3-(6-methoxynaphthoyl)indole	JWH-166, JWH-081 6-methoxynaphthyl isomer
8.3.48	1-Pentyl-3-(7-methoxynaphthoyl)indole	JWH-081 7-methoxynaphthyl isomer
8.3.49	1-Pentyl-3-(8-methoxynaphthoyl)indole	JWH-081 8-methoxynaphthyl isomer
8.3.50	1-Pentyl-2-methyl-3-(4-methoxy-naphthoyl)indole	JWH-098
8.3.51	1-Pentyl-2-methyl-3-(4-methoxy-naphthoyl)indole-D9	
8.3.52	1-Pentyl-2-ethyl-3-(1-naphthoyl)indole	JWH-116
8.3.53	1-Pentyl-3-(4-methylnaphthoyl)indole	JWH-122
8.3.54	1-Pentyl-3-(4-methylnaphthoyl)indole-D9	
8.3.55	1-Pentyl-3-(4-methylnaphthoyl)indole-D11	
8.3.56	1-Pentyl-3-(2-methylnaphthoyl)indole	JWH-122(2-methylnaphthyl analogue)
8.3.57	1-Pentyl-3-(3-methylnaphthoyl)indole	JWH-122(3-methylnaphthyl analogue)
8.3.58	1-Pentyl-3-(5-methylnaphthoyl)indole	JWH-122(5-methylnaphthyl analogue)
8.3.59	1-Pentyl-3-(6-methylnaphthoyl)indole	JWH-122(6-methylnaphthyl analogue)
8.3.60	1-Pentyl-3-(7-methylnaphthoyl)indole	JWH-122(7-methylnaphthyl analogue)
8.3.61	1-Pentyl-3-(8-methylnaphthoyl)indole	JWH-122(8-methylnaphthyl analogue)
8.3.62	1-(Pent-4-enyl)-3(4-methylnaphthoyl)indole	JWH-122 (4-pentenyl analogue)
8.3.63	1-(5F-Pentyl)-2-ethyl-3-(1-naphthoyl)indole	JWH-122 5-F analogue

Ref	Substance	Other names
8.3.64	1-(5Cl-Pentyl)-2-ethyl-3-(1-naphthoyl)indole	JWH-122 5-Cl analogue
8.3.65	1-(5Br-Pentyl)-2-ethyl-3-(1-naphthoyl)indole	JWH-122 5-Br analogue
8.3.66	1-(5I-Pentyl)-2-ethyl-3-(1-naphthoyl)indole	JWH-122 5-I analogue
8.3.67	(1-Propyl-1H-indol-3-yl)(4-propyl-1-naphthalenyl)-methanone	JWH-180
8.3.68	(1-Propyl-1H-indol-3-yl)(4-propyl-1-naphthalenyl)-methanone-D7	
8.3.69	1-Pentyl-3-(4-propyl-1-naphthyl)indole	JWH-182
8.3.70	1-(2-(4-Morpholinyl)ethyl)-3-(4-methyl-1-naphthoyl)indole	JWH-193
8.3.71	1-(2-(4-Morpholinyl)ethyl)-3-(4-methoxy-1-naphthoyl)indole	JWH-198
8.3.72	1-(2-(4-Morpholinyl)ethyl)-3-(1-naphthoyl)indole	JWH-200, WIN 55,225
8.3.73	1-(2-(4-Morpholinyl)ethyl)-3-(1-naphthoyl)indole-D4	
8.3.74	1-(2-(4-Morpholinyl)ethyl)-3-(1-naphthoyl)indole-D5	
8.3.75	1-(2-(4-Morpholinyl)ethyl)-3-(2-naphthoyl)indole	JWH-200 2-naphthyl isomer
8.3.76	1-Pentyl-3-(4-ethyl-naphthoyl)indole	JWH-210
8.3.77	1-Pentyl-3-(4-ethyl-naphthoyl)indole-D9	
8.3.78	1-Pentyl-3-(4-ethyl-naphthoyl)indole-D11	
8.3.79	1-Pentyl-3-(2-ethyl-naphthoyl)indole	JWH-210 2-ethylnaphthyl isomer
8.3.80	1-Pentyl-3-(3-ethyl-naphthoyl)indole	JWH-210 3-ethylnaphthyl isomer
8.3.81	1-Pentyl-3-(5-ethyl-naphthoyl)indole	JWH-210 5-ethylnaphthyl isomer
8.3.82	1-Pentyl-3-(6-ethyl-naphthoyl)indole	JWH-210 6-ethylnaphthyl isomer
8.3.83	1-Pentyl-3-(7-ethyl-naphthoyl)indole	JWH-210 7-ethylnaphthyl isomer
8.3.84	1-Pentyl-3-(8-ethyl-naphthoyl)indole	JWH-210 8-ethylnaphthyl isomer
8.3.85	1-(5-Fluoropentyl)-3-(4-ethylnaphthyl)indole	5-Fluoro JWH-210 , EAM2201
8.3.86	1-Pentyl-2-methyl-3-(4-ethyl-naphthoyl)indole	JWH-213
8.3.87	1-Pentyl-3-(4-bromonaphthoyl)indole	JWH-387
8.3.88	1-Pentyl-3-(4-chloronaphthoyl)indole	JWH-398
8.3.89	1-Pentyl-3-(4-chloronaphthoyl)indole-D9	
8.3.90	1-Pentyl-3-(4-chloronaphthoyl)indole-D11	
8.3.91	1-Pentyl-3-(2-chloronaphthoyl)indole	JWH-398 2-chloronaphthyl isomer
8.3.92	1-Pentyl-3-(3-chloronaphthoyl)indole	JWH-398 3-chloronaphthyl isomer
8.3.93	1-Pentyl-3-(5-chloronaphthoyl)indole	JWH-398 5-chloronaphthyl isomer
8.3.94	1-Pentyl-3-(6-chloronaphthoyl)indole	JWH-398 6-chloronaphthyl isomer
8.3.95	1-Pentyl-3-(7-chloronaphthoyl)indole	JWH-398 7-chloronaphthyl isomer
8.3.96	1-Pentyl-3-(8-chloronaphthoyl)indole	JWH-398 8-chloronaphthyl isomer
8.3.97	1-Pentyl-3-(4-fluoronaphthoyl)indole	JWH-412
8.3.98	1-Pentyl-3-(8-bromonaphthoyl)indole	JWH-424
8.3.99	(1-Methylpiperidinyl)methyl homologue of JWH-018	AM1220
8.3.100	(1-Methylpiperidinyl)methyl homologue of JWH-018-D5	
8.3.101	(1-Methylazepen-3-yl)methyl homologue of JWH-018	AM1220 azepane isomer
8.3.102	1-(5-Fluoropentyl)-3-naphthoyl-6-nitroindole	AM1235
8.3.103	1-(5-Fluoropentyl)-3-(1-naphthoyl)indole	AM2201
8.3.104	1-(5-Fluoropentyl)-3-(1-naphthoyl)indole-D4	
8.3.105	1-(5-Fluoropentyl)-3-(1-naphthoyl)indole-D5	
8.3.106	1-(5-Fluoropentyl)-3-(2-naphthoyl)indole	AM2201 (2-naphthyl homologue)

Ref	Substance	Other names
8.3.107	1-(3-Chloropentyl)-3-(1-naphthoyl)indole	AM2201 (3-chloro homologue)
8.3.108	1-(5-Chloropentyl)-3-(1-naphthoyl)indole	AM2201 (5-chloro homologue)
8.3.109	1-(5-Fluoropentyl)-3-(4-Methoxynaphthyl)indole	AM2201 (4-methoxy homologue)
8.3.110	[1-(5-Fluoropentyl)-1H-indol-3-yl](4-methyl-1-naphthalenyl)-methanone	MAM-2201
8.3.111	[1-(5-Fluoropentyl)-1H-indol-3-yl](4-methyl-1-naphthalenyl)-methanone-D5	
8.3.112	[1-(2-Fluoropentyl)-1H-indol-3-yl](4-methyl-1-naphthalenyl)-methanone	MAM-2201 2-Fluoroisomer
8.3.113	[1-(3-Fluoropentyl)-1H-indol-3-yl](4-methyl-1-naphthalenyl)-methanone	MAM-2201 3-Fluoroisomer
8.3.114	[1-(4-Fluoropentyl)-1H-indol-3-yl](4-methyl-1-naphthalenyl)-methanone	MAM-2201 4-Fluoroisomer
8.3.115	[1-(5-Chloropentyl)-1H-indol-3-yl](4-methyl-1-naphthalenyl)-methanone	MAM-2201 5-Chloro analogue
8.3.116	1-(5-Fluoropentyl)-1H-indol-3-yl](4-ethyl-1-naphthalenyl)-methanone	EAM-2201
8.3.117	1-(5-Fluoropentyl)-1H-indol-3-yl](4-fluoro-1-naphthalenyl)-methanone	
8.3.118	1-(5-Fluoropentyl)-1H-indol-3-yl](4-chloro-1-naphthalenyl)-methanone	Cl-2201
8.3.119	1-(4-Cyanobutyl)-3-(naphthylen-1-oyl)indole	AM2232, SGT-18
8.3.120	1-(4Fluorobenzyl)-1H-indol-3-yl-(1-naphthalenyl)-methanone	FUB-JWH-018
8.3.121	1-(4Fluorobenzyl)-1H-indol-3-yl-(1-naphthalenyl)-methanone-D5	
8.3.122	1-(Cyclohexylmethyl)-1H-indol-3-yl-(4-Me-1-naphthalenyl)-methanone	CHM-122, CHM-JWH-122
8.4	**Naphthyl methyl indoles**	
8.4.1	1-Pentyl-3-(1-naphthylmethyl)indole	JWH-175
8.4.2	1-Pentyl-3-(1-naphthylmethyl)indole-D11	
8.5	**Phenylacetyl indoles**	
8.5.1	1-Pentyl-3-(phenylacetyl)indole	JWH-167
8.5.2	1-Pentyl-3-(4-methoxyphenylacetyl)indole	JWH-201
8.5.3	1-Pentyl-3-(4-methoxyphenylacetyl)indole-D11	
8.5.4	1-Pentyl-3-(2-chlorophenylacetyl)indole	JWH-203
8.5.5	1-Pentyl-3-(2-chlorophenylacetyl)indole-D11	
8.5.6	1-Pentyl-3-(3-chlorophenylacetyl)indole	JWH-203 3-chlorophenyl isomer
8.5.7	1-Pentyl-3-(4-chlorophenylacetyl)indole	JWH-203 4-chlorophenyl isomer
8.5.8	1-Pentyl-3-(2-bromophenylacetyl)indole	JWH-249
8.5.9	1-Pentyl-3-(2-methoxyphenylacetyl)indole	JWH-250
8.5.10	1-Pentyl-3-(2-methoxyphenylacetyl)indole-D5	
8.5.11	1-Pentyl-3-(2-methoxyphenylacetyl)indole-D11	
8.5.12	1-Pentyl-3-(2-methylphenylacetyl)indole	JWH-251
8.5.13	1-Pentyl-3-(2-methylphenylacetyl)indole-D11	
8.5.14	1-Pentyl-3-(3-methylphenylacetyl)indole	JWH-251 3-methyl isomer

Ref	Substance	Other names
8.5.15	1-Pentyl-3-(4-methylphenylacetyl)indole	JWH-251 4-methyl isomer
8.5.16	1-Pentyl-3-(3-methoxyphenylacetyl)indole	JWH-302
8.5.17	1-Pentyl-3-(3-methoxyphenylacetyl)indole-D11	
8.5.18	1-(1-Methyl-2-piperidinyl)methyl-3-(2-methoxyphenylacetyl) indole	Cannabipiperidiethanone
8.5.19	1(2-Cyclohexylethyl)-3-(2-methoxyphenylacetyl)indole	RCS-8
8.5.20	1(2-Cyclohexylethyl)-3-(2-methoxyphenylacetyl)indole-D3	
8.5.21	1(2-Cyclohexylethyl)-3-(3-methoxyphenylacetyl)indole	RCS-8(3-methoxy homologue)
8.5.22	1(2-Cyclohexylethyl)-3-(4-methoxyphenylacetyl)indole	RCS-8(4-methoxy homologue)
8.6	**Naphthylacetyl indoles**	
8.6.1	1-Me-3-(naphthalen-1-ylacetyl)indole	NAMIE
8.6.2	1-Butyl-7-MeO-3-(naphthalen-1-ylacetyl)indole	7'-MeO-NABuTIE
8.6.3	1-Pentyl-3-(naphthalen-1-ylacetyl)indole	NAPIE
8.7	**Azetidinoyl indoles**	
8.7.1	Azetidin-1-yl-1(1-(4-Flbenzyl)indol-1-yl methanone	AZE-FUBICA, AZE-FUBIM
8.8	**Benzoyl indoles**	
8.8.1	1-Pentyl-3-(2-iodobenzoyl)indole	AM679
8.8.2	1-(5-Fluoropentyl)-3-(2-iodobenzoyl)indole	AM694
8.8.3	1-(5-Fluoropentyl)-3-(3-iodobenzoyl)indole	AM694 3-Iodo isomer
8.8.4	1-(5-Fluoropentyl)-3-(4-iodobenzoyl)indole	AM694 4-Iodo isomer
8.8.5	1-(N-Methyl-2-piperidinyl)methyl-3-(2-iodobenzoyl)indole	AM2233
8.8.6	1-(N-Methyl-2-piperidinyl)methyl-3-(2-iodobenzoyl) indole-D5	
8.8.7	1-Butyl-3-(4-methoxybenzoyl)indole	RCS-4 (C4 homologue)
8.8.8	1-Pentyl-3-(4-methoxybenzoyl)indole	RCS-4
8.8.9	1-Pentyl-3-(4-methoxybenzoyl)indole-D9	
8.8.10	1-Pentyl-3-(4-methoxybenzoyl)indole-D11	
8.8.11	1-Pentyl-3-(2-methoxybenzoyl)indole	RCS-4(2-methoxy homologue)
8.8.12	1-Pentyl-3-(3-methoxybenzoyl)indole	RCS-4(3-methoxy homologue)
8.9	**Pyrrolidinoyl indoles**	
8.9.1	1-(5-Fluoropentyl)-3-pyrrolidine-1-carbonylindole	5F-PY-PICA
8.10	**Pyridinoyl indoles**	
8.10.1	5-Fluoropentyl-3-pyridinoylindole	
8.11	**Piperidinyl indoles**	
8.11.1	1-(5-Fluoropentyl)-4-benzylpiperazin-1-ylindane methanone	5F-BEPIRAPIM, NNL2
8.12	**Adamantoyl indoles**	
8.12.1	Adamantyl(1-pentylindol-3-yl)methanone	AB-001

Ref	Substance	Other names
8.12.2	Adamantyl(1-(5-fluoropentyl)indol-3-yl)methanone	5-FI AB001
8.12.3	1-[(N-Methylpiperidin-2-yl)methyl]-3-(adamant-1-oyl)indole	AM1248
8.12.4	1-(N-Methylazepan-3-yl)-3-(adamant-1-oyl)indole	AM1248 azepane isomer
8.13	**Tetramethylcyclopropoyl indoles**	
8.13.1	(1H-Indol-3-yl)-(2,2,3,3-tetramethylcyclopropyl)methanone	
8.13.2	1-(Pentylindol-3-yl)-(2,2,3,3-tetramethylcyclopropyl)methanone	UR-144
8.13.3	1-(Pentylindol-3-yl)-(2,2,3,3-tetramethylcyclopropyl)methanone-D4	
8.13.4	1-(Pentylindol-3-yl)-(3,3,4-trimethylpentenyl)methanone	(= UR-144 GC-MS degradation product)
8.13.5	1-(Pent-4-eneylindol-3-yl)-(2,2,3,3-tetramethylcyclopropyl) methanone	UR-144 (N-pentenyl analogue)
8.13.6	1-(5-Fluoropentylindol-3-yl)-(2,2,3,3-tetramethylcyclopropyl) methanone	5FUR-144, XLR-11
8.13.7	1-(5-Fluoropentylindol-3-yl)-(2,2,3,3-tetramethylcyclopropyl) methanone-D5	
8.13.8	1-(5-FI-Pentylindol-3-yl)-(3,3,4-trimethylpentenyl)methanone	(= XLR11 GC-MS degradation product)
8.13.9	1-(5-Fluorobutylindol-3-yl)-(2,2,3,3-tetramethylcyclopropyl) methanone	XLR-12
8.13.10	1-(5-Bromopentylindol-3-yl)-(2,2,3,3-tetramethylcyclopropyl) methanone	UR-144 (5-bromopentyl analogue)
8.13.11	1-(5-Methylheptyl-3-yl)-(2,2,3,3-tetramethylcyclopropylmethanone	UR-144 (N-(5-methylheptyl) analogue)
8.13.12	1-(Heptylindol-3-yl)-(2,2,3,3-tetramethylcyclopropyl)methanone	UR-144 (N-heptyl analogue)
8.13.13	1-(2-Chloropentylindol-3-yl)-(2,2,3,3-tetramethylcyclopropyl) methanone	UR-144 N-(2-chloropentyl) analogue
8.13.14	1-(3-Chloropentylindol-3-yl)-(2,2,3,3-tetramethylcyclopropyl) methanone	UR-144 N-(3-chloropentyl) analogue
8.13.15	1-(5-Chloropentylindol-3-yl)-(2,2,3,3-tetramethylcyclopropyl) methanone	UR-144 N-(4-chloropentyl) analogue
8.13.16	1-(5-Chloropentylindol-3-yl)-(2,2,3,3-tetramethylcyclopropyl) methanone	UR-144 N-(5-chloropentyl) analogue
8.13.17	1-(5-Pentyl-2-Me-indol-3-yl)-(2,2,3,3-tetramethylcyclopropyl) methanone	M-144
8.13.18	1-(4-Fluorobenzyl)-(2,2,3,3-tetramethylcyclopropyl)methanone	FUB-144
8.13.19	1-(Methyltetrahydropyran-4-ylindole-3-yl)-(2,2,3,3,-tetramethylcyclopropyl)methanone	A834,735
8.13.20	1-(2-(4-Morpholinyl)ethyl)-(2,2,3,3-tetramethylcyclopropyl) methanone	A796,260
8.13.21	1-(1-Methyl-2-piperidinyl)-(2,2,3,3-tetramethylcyclopropyl) methanone	AB-005
8.13.22	1-(1-Methyl-2-azepanyl)-(2,2,3,3-tetramethylcyclopropyl) methanone	AB-005 azepane homologue
8.14	**3,4,4-Trimethyl-pent-2-en-1-one indoles**	
8.14.1	3,4,4-Trimethyl-1-(1-(2-morpholinoethyl)-1H-indol-3-yl)pent-2-en-1-one)	JWH-200 analogue 1

Ref	Substance	Other names
8.15	**Indole carboxamides**	
8.15.1	N-(Methylcyclopropyl)-1-(5Fpentyl)indole carboxamide	5F-CYPPICA
8.15.2	N-Phenyl-1-pentylindol-3-carboxamide	SDB-006 N-Phenyl analogue
8.15.3	N-Phenyl-1-(5F-pentyl)indol-3-carboxamide	LTI-701
8.15.4	N-Benzyl-1-pentylindol-3-carboxamide	SDB-006
8.15.5	N-Benzyl-1-(5Fl-pentyl)indol-3-carboxamide	5 Fl SDB-006
8.15.6	N-(1-Naphthalenyl)-1-pentylindol-3-carboxamide	NNE1, MN-24
8.15.7	N-(2-Naphthalenyl)-1-pentylindol-3-carboxamide	NNE1 2-naphthyl isomer
8.15.8	N-(1-Naphthalenyl)-1-(2-fluoropentyl)indol-3-carboxamide	2-Fl NNEI, 2-Fl MN24,
8.15.9	N-(1-Naphthalenyl)-1-(3-fluoropentyl)indol-3-carboxamide	3-Fl NNE1, 3-Fl MN-24
8.15.10	N-(1-Naphthalenyl)-1-(4-fluoropentyl)indol-3-carboxamide	4-Fl NNE1, 4-Fl MN-24
8.15.11	N-(1-Naphthalenyl)-1-(5-fluoropentyl)indol-3-carboxamide	5-Fl NNE1, 5-Fl MN-24
8.15.12	N-(2-Naphthalenyl)-1-(5-fluoropentyl)indol-3-carboxamide	5-Fl NNE1 2-naphthyl isomer
8.15.13	N-(1-Naphthalenyl)-1-(5-Cl-pentyl)indol-3-carboxamide	5-C-NNE1
8.15.14	N-(1-Naphthalenyl)-1-(4-Fl-benzyl)indol-3-carboxamide	FDU-NNE1
8.15.15	N-Adamantyl-1-pentylindol-3-carboxamide	APICA, 2NE1, SDB-001
8.15.16	N-Adamantyl-1-(5-fluoropentyl)indol-3-carboxamide	5Fl APICA, STS-135, 2NE2
8.15.17	N-(1-Amino-3-methyl)-1-oxobutan-2-yl-1-(5-Fl-pentyl)indole -3 -carboxamide	5-Fl-ABICA
8.15.18	N-(1-Amino-3,3-dimethyl)-1-oxobutan-2-yl-1-pentylindole -3 -carboxamide	ADBICA, ADB-PICA
8.15.19	N-(1-Amino-3,3-dimethyl)-1-oxobutan-2-yl-1-pentylindole -3 -carboxamide-D9	
8.15.20	N-(1-Amino-3,3-dimethyl)-1-oxobutan-2-yl-1-(5Fl-pentyl) indole -3 -carboxamide	5-Fl ADBICA
8.15.21	N-(1-MeO-3-Me-1-oxobutan-2-yl-1-pentylindole -3-carboxamide	MMB-018
8.15.22	N-(1-MeO-3-Me-1-oxobutan-2-yl-1-(5Fl-pentyl)indole -3-carboxamide	5F-MMB-PICA, MMB-2201, I-AMB
8.15.23	N-(1-MeO-3,3-dimethyl-1-oxobutan-2-yl-1-(5Fl-pentyl)indole -3-carboxamide	5F-MDMB-PICA
8.15.24	N-(1-Amino-1-oxo-3-phenylpropan-2-yl)-1-pentylindole-3-carboxamide	APP-PICA
8.15.25	N-(1-Amino-1-oxo-3-phenylpropan-2-yl)-1-(5-Fl-pentyl) indole-3-carboxamide	5F-APP-PICA, PX-1
8.15.26	N-(1-Amino-3-methyl-1-oxobutan-2-yl)-1-cyclohexylmethylindole carboxamide	AB-CHMICA
8.15.27	N-(1-Methoxy-3-methyl)-1-oxobutan-2-yl)-1-cyclohexylmethylindole carboxamide	MMB-CHMICA
8.15.28	N-(1-Methoxy)-1-oxopentan-2-yl)-1-cyclohexylmethylindole carboxamide	MEP-CHMICA
8.15.29	N-(1-Methoxy-3,3-dimethyl)-1-oxobutan-2-yl-1-cyclohexylmethylindole carboxamide	MDMB-CHMICA
8.15.30	N-(1-Methoxy-3-methyl)-1-oxobutan-2-yl-1-benzylindole carboxamide	AB-BICA
8.15.31	N-(1-Methoxy-3,3-dimethyl)-1-oxobutan-2-yl-1-benzylindole carboxamide	ADB-BICA
8.15.32	N-(1-Amino-3-methyl)-1-oxobutan-2-yl-1-(4-Fl-benzyl)indole carboxamide	AB-FUBICA
8.15.33	N-(1-Amino-3,3-dimethyl)-1-oxobutan-2-yl-1-(4-Fl-benzyl) indole carboxamide	ADB-FUBICA

Ref	Substance	Other names
8.15.34	N-(1-Methoxy-3-methyl)-1-oxobutan-2-yl)-1-(4-Fl-benzyl) indole carboxamide	MMB-FUBICA
8.15.35	N-(1-Methoxy-3,3-dimethyl)-1-oxobutan-2-yl)-1-(4-Fl-benzyl) indole carboxamide	MDMB-FUBICA
8.15.36	N-(1-Methoxy-1-oxopentan-2-yl)-1-(4-Fl-benzyl)indole carboxamide	MEP-FUBICA, MMB-FUBICA isomer 1
8.15.37	N-(1-Phenyl-butan-2-yl)-1-(4-Fl-benzyl)undole carboxamide	Ethylphenyl-FUBICA
8.15.38	N-Fenchyl-1-(2-morpholinoethyl)-7-MeO-indole-3-carboxamide	MN-25
8.15.39	N-Fenchyl-1-(2-morpholinoethyl)-2-Me-7-MeO-indole-3-carboxamide	2-Me MN-25
8.15.40	N-(Quinolin-8-yl)-1-pentyl-indole-3-carboxamide	JWH-018 Quinolinyl carboxamide
8.15.41	N-(Quinolin-8-yl)-1-(5-Fl pentyl)-indole-3-carboxamide	AM2201 Quinolinyl carboxamide
8.15.42	N-(1-Methyl-1-phenylethyl) -1-pentylindol-3-carboxamide	Cumyl-PICA
8.15.43	N-(1-Methyl-1-phenylethyl) -1-(5-fluoropentyl)indol-3-carboxamide	5-Fl Cumyl-PICA
8.15.44	N-(1-Methyl-1-(4F-phenyl)ethyl) -1-(5-fluoropentyl)indol-3-carboxamide	SGT-64
8.15.45	N-(1-phenyl-butyl)-1-(5-fluoropentyl)indol-3-carboxamide	5F-Ethylbenzyl-PICA

8.16	Indole carboxylates	
8.16.1	Methyl 1-pentylindole-3-carboxylate	
8.16.2	Methyl 1-(5-fluoropentyl)indole-3-carboxylate	
8.16.3	Methyl 1-(cyclohexylmethyl)indole-3-carboxylate	M-CHMIC
8.16.4	Naphthalenyl-1-pentyl-3-carboxlate	CBL-018
8.16.5	Naphthalenyl-1-(5-fluoropentyl)indole-3-carboxylate	NM-2201, CBL-2201
8.16.6	Naphthalenyl-1-(4-fluorobenzyl)indole-3-carboxylate	FDU-PB22, ADUPB-22

8.17	Quinolinyl indole carboxylates	
8.17.1	Quinolin-8-yl-1-pentyl-1H-indole-3-carboxylate	PB-22, QUPIC
8.17.2	Quinolin-8-yl-1-pentyl-1H-indole-3-carboxylate-D9	
8.17.3	Quinolin-8-yl-1-pentyl-1H-indole-3-carboxylate-D11	
8.17.4		PB-22 3-quinolinyl isomer
8.17.5		PB-22 4-quinolinyl isomer
8.17.6		PB-22 5-quinolinyl isomer
8.17.7		PB-22 6-quinolinyl isomer
8.17.8		PB-22 7-quinolinyl isomer
8.17.9		PB-22 6-hydroxyquinolinyl isomer
8.17.10		PB-22 5-hydroxyisoquinolinyl isomer
8.17.11		PB-22 6-hydroxyisoquinolinyl isomer
8.17.12		PB-22 7-hydroxyisoquinolinyl isomer
8.17.13		PB-22 8-hydroxyisoquinolinyl isomer
8.17.14	Quinolin-8-yl-1-(5-fluoropentyl)-1H-indole-3-carboxylate	5-Fluoro PB-22
8.17.15		5-Fluoro PB-22 3-HOquinoline isomer
8.17.16		5-Fluoro PB-22 4-HOquinoline isomer
8.17.17		5-Fluoro PB-22 5-HOquinoline isomer

Ref	Substance	Other names
8.17.18		5-Fluoro PB-22 6-HOquinoline isomer
8.17.19		5-Fluoro PB-22 7-HOquinoline isomer
8.17.20		5-Fl PB-22 4-HOisoquinoline
8.17.21		5-Fl PB-22 5-HOisoquinoline
8.17.22		5-Fl PB-22 6-HOisoquinoline
8.17.23		5-Fl PB-22 7-HOisoquinoline
8.17.24		5-Fl PB-22 8-HOisoquinoline
8.17.25		5-Fluoropentyl PB-22 (2-Fl isomer)
8.17.26		5-Fluoropentyl PB-22 (3-Fl isomer)
8.17.27		5-Fluoropentyl PB-22 (4-Fl isomer)
8.17.28	Quinolin-8-yl-1-(4-fluorobenzyl)-1H-indole-3-carboxylate	FUB-PB-22
8.17.29	Quinolin-8-yl-1-cyclohexylmethyl-1H-indole-3-carboxylate	BB-22, QUCHIC
8.17.30		BB-22 3-quinolinyl isomer
8.17.31		BB-22 4-quinolinyl isomer
8.17.32		BB-22 5-quinolinyl isomer
8.17.33		BB-22 6-quinolinyl isomer
8.17.34		BB-22 7-quinolinyl isomer
8.17.35		BB-22 4-hydroxyisoquinolinyl isomer
8.17.36		BB-22 5-hydroxyisoquinolinyl isomer
8.17.37		BB-22 7-hydroxyisoquinolinyl isomer
8.17.38		BB-22 8-hydroxyisoquinolinyl isomer

8.18	Pyridinoyl indoles	
8.18.1	5-Fluoropentyl-3-pyridinoylindole	
8.18.2	Piperidinyl indole carboxamides	
8.18.3	(4-Methylpiperidin-1-yl)-1-pentylindole carboxide	MEPIRAPIM

8.19	Thiazole indoles	
8.19.1	N-Pentyl-3-thiazole-indole analogue 1	PTI-1
8.19.2	N-Pentyl-3-thiazole-indole analogue 2	PTI-2

	(4) Indazole core	
8.20	Naphthoyl indazoles	
8.20.1	1-Naphthalenyl(1-pentyl-1-H-indazol-3-yl)methanone	THJ 018, JWH-018 indazole analogue
8.20.2	1-(4-MeO-naphthalenyl)(1-pentyl-1-H-indazol-3-yl)methanone	THJ-081, SGT-035
8.20.3	1-Naphthalenyl(1-(5-Fl-pentyl)-1-H-indazol-3-yl)methanone	THJ 2201, AM-2201 indazole analogue
8.20.4	1-Naphthalenyl(1-(5-Cl-pentyl)-1-H-indazol-3-yl)methanone	5-Cl-THJ-018
8.20.5	1-Naphthalenyl(1-(5-Br-pentyl)-1-H-indazol-3-yl)methanone	5-Br-THJ-018

8.21	Tetramethylcyclopropoyl indazoles	
8.21.1	1-(5-Fluoropentylindazol-3-yl)-(2,2,3,3-tetramethylcyclopropyl)methanone	FAB-144

Ref	Substance	Other names
8.22	**Indazole carboxamides**	
8.22.1	N-(1-Naphthalenyl)-1-pentylindazole-3-carboxamide	MN-18
8.22.2	N-(1-Naphthalenyl)-2-pentylindazole-3-carboxamide	MN-18 2-indazole isoner
8.22.3	N-(1-Naphthalenyl)-1-(5-fluoropentyl)indazole-3-carboxamide	5-Fl-MN-18
8.22.4	N-Adamantyl-1-pentylindazole-3-carboxamide	AKB-48, APINACA
8.22.5	N-Adamantyl-1-pentylindazole-3-carboxamide-D9	
8.22.6	N-Adamantyl-1-pentylindazole-3-carboxamide-D11	
8.22.7	N-Adamantyl-1-(5-fluoropentyl)indazole-3-carboxamide	5-F AKB48, 5-F APINACA
8.22.8	N-Adamantyl-1-(5-chloropentyl)indazole-3-carboxamide	5-Cl AKB48, 5-Cl APINACA
8.22.9	N-Adamantyl-1-(5-bromopentyl)indazole-3-carboxamide	5-Br AKB48, 5-Br APINACA
8.22.10	N-Adamantyl-1-(4-fluorobenzyl)indazole-3-carboxamide	FUB-APINACA, AKB-48 4-Fl benzyl analogue
8.22.11	N-Adamantyl-1-cyclohexylmethylindazole-3-carboxamide	ACHMINACA
8.22.12	N-Adamant-1-yl -1-tetrahydropyranylindazole-3-carboxamide	ATHPINACA, Adamant-1-yl THPINACA
8.22.13	N-Adamant-2-yl -1-tetrahydropyranylindazole-3-carboxamide	ATHPINACA, Adamant-2-yl THPINACA
8.22.14	N-(1-Adamantyl)-1-[(tetrahydropyran-4-yl)methyl]-1H-indazole-3-carboxamide	Adamant-1-yl-THPINACA isomer 1
8.22.15	N-(2-Adamantyl)-1-[(tetrahydropyran-4-yl)methyl]-1H-indazole-3-carboxamide	Adamant-2-yl-THPINACA isomer 2
8.22.16	N-(1-Amino-3-methyl-1-oxobutan-2-yl)-1-(pentyl-1H-indazole)-3-carboxamide	AB-PINACA
8.22.17	AB-PINACA-D9	AB-PINACA-D9
8.22.18	N-(1-Amino-3-methyl-1-oxobutan-2-yl)-1-(2-fluoropentyl-1H-indazole)-3-carboxamide	2-Fl-AB-PINACA
8.22.19	N-(1-Amino-3-methyl-1-oxobutan-2-yl)-1-(3-fluoropentyl-1H-indazole)-3-carboxamide	3-Fl-AB-PINACA
8.22.20	N-(1-Amino-3-methyl-1-oxobutan-2-yl)-1-(4-fluoropentyl-1H-indazole)-3-carboxamide	4-Fl AB-PINACA
8.22.21	N-(1-Amino-3-methyl-1-oxobutan-2-yl)-1-(5-fluoropentyl-1H-indazole)-3-carboxamide	5-Fl AB-PINACA
8.22.22	N-(1-Amino-3-methyl-1-oxobutan-2-yl)-1-(5-chloropentyl-1H-indazole)-3-carboxamide	5-Cl AB-PINACA
8.22.23	N-(1-Amino-3,3-dimethyl)-1-oxobutan-2-yl-1-pentylindazole -3 -carboxamide	ADB-PINACA
8.22.24	N-(1-Amino-3,3-dimethyl)-1-oxobutan-2-yl-1-pentylindazole -3-carboxamide-D9	ADB-PINACA-D9
8.22.25	N-(1-Amino-3,3-dimethyl)-1-oxobutan-2-yl-1-(5 Fl pentyl) indazole -3-carboxamide	5-Fl ADB-PINACA
8.22.26	N-(1-Amino-2,3-dimethyl-1-oxobutan-2-yl)-1-pentylindazole-3-carboxamide	ADB-PINACA Isomer 1
8.22.27	N-(1-Amino-3-methyl-1-oxopentan-2-yl)-1-pentylindazole-3-carboxamide	ADB-PINACA Isomer 2
8.22.28	N-(1-Amino-3-methyl-1-oxopentan-2-yl)-1-(5F-pentyl)indazole-3-carboxamide	5-Fluoro-ADB-PINACA Isomer 2
8.22.29	N-(1-Amino-4-methyl-1-oxopentan-2-yl)-1-pentylindazole-3-carboxamide	ADB-PINACA Isomer 4
8.22.30	N-(1-Amino-1-oxohexan-2-yl)-1-pentylindazole-3-carboxamide	ADB-PINACA Isomer 3
8.22.31	N-(1-Amino-3,3-dimethyl)-1-oxobutan-2-yl-1-(benzyl)indazole -3-carboxamide	ADB-BINACA
8.22.32	[N-(4-Fluorobenzyl) analogue of AB-PINACA]	AB-FUBINACA
8.22.33	[N-(4-Fluorobenzyl) analogue of AB-PINACA]-D4	AB-FUBINACA-D4

Ref	Substance	Other names
8.22.34	[N-(2-Fluorobenzyl) analogue of AB-PINACA]	2-Fl-benzyl isomer of AB-FUBINACA
8.22.35	[N-(3-Fluorobenzyl) analogue of AB-PINACA]	3-Fl-benzyl isomer of AB-FUBINACA
8.22.36	N-Me-N-(1-amino-1-oxobutan-2-yl)-1-(4-Fl-benzyl)indazole carboxamide	N-Me AB-FUBINACA
8.22.37	N-(1-amino-1-oxobutan-2-yl)-2-(4-Fl-benzyl)indazole carboxamide	AB-FUBINACA 2'-indazole isomer
8.22.38	2-(1-Pentylindazole)-3-carboxamide-3-Me-methylbutanoate	AMB
8.22.39	2-(1-(2-Fluoropentyl)indazole)-3-carboxamide-3-Me-methylbutanoate	2-Fl-AMB
8.22.40	2-(1-(3-Fluoropentyl)indazole)-3-carboxamide-3-Me-methylbutanoate	3-Fl-AMB
8.22.41	2-(1-(4-Fluoropentyl)indazole)-3-carboxamide-3-Me-methylbutanoate	4-Fl-AMB
8.22.42	2-(1-(5-Fluoropentyl)indazole)-3-carboxamide-3-Me-methylbutanoate	5-Fl-AMB
8.22.43	N-(1-MeO-3-Me-1-oxobutan-2-yl)-1-(4-Fl-benzyl)indazole-3-carboxamide	FUB-AMB
8.22.44	N-(1-MeO-3,3-dimethyl-1-oxobutan-2-yl)-1-(2-Fl pentyl) indazole carboxamide	2-Fl-ADB, 2F-MDMB-PINACA
8.22.45	N-(1-MeO-3,3-dimethyl-1-oxobutan-2-yl)-1-(3-Fl pentyl) indazole carboxamide	3-Fl-ADB, 3F-MDMB-PINACA
8.22.46	N-(1-MeO-3,3-dimethyl-1-oxobutan-2-yl)-1-(4-Fl pentyl) indazole carboxamide	4-Fl-ADB, 4F-MDMB-PINACA
8.22.47	N-(1-MeO-3,3-dimethyl-1-oxobutan-2-yl)-1-(5-Fl pentyl) indazole carboxamide	5-Fl-ADB, 5F-MDMB-PINACA
8.22.48		(R)-5Fl-ADB
8.22.49		(S)-5Fl-ADB
8.22.50	N-(1-EtO-3-methyl-1-oxobutan-2-yl)]-1-[5-Fl pentyl]indazole carboxamide	5F-EMB-PINACA
8.22.51	N-(1-EtO-3,3-dimethyl-1-oxobutan-2-yl)]-1-[5-Fl pentyl] indazole carboxamide	5F-EDMB-PINACA
8.22.52	N-[1-Aminocarbonyl-2,2-dimethylpropyl]-1-[4-Fl benzyl] indazole carboxamide	ADB-FUBINACA
8.22.53	N-[1-Ethylaminocarbonyl-2,2-dimethylpropyl]-1-[4-Fl benzyl] indazole carboxamide	EADB-FUBINACA
8.22.54	N-(1-Amino-1-oxo-3-phenylpropan-2-yl)-1-([4-Fl benzyl) indazole-3-carboxamide	APP-FUBINACA
8.22.55	N-(1-EtO-3-methyl-1-oxobutan-2-yl)]-1-[4-Fl benzyl]indazole carboxamide	EMB-FUBINACA
8.22.56	N-(1-MeO-3,3-dimethyl-1-oxobutan-2-yl)]-1-[4-Fl benzyl] indazole carboxamide	MDMB-FUBINACA
8.22.57	N-(1-MeO-1-oxopentan-2-yl) -1-[4-Fl benzyl]indazole carboxamide	MEP-FUBINACA
8.22.58	2-(1-(5-Fluoropentyl)indazole)-3-carboxamide-3-Me-ethylbutanoate	5-Fl-AEB
8.22.59	N-(1-Amino-3-methyl-1-oxobutan-2-yl)-1-(cylohexyl-Me)-1H-indazole)-3-carboxamide	AB-CHMINACA
8.22.60	AB-CHMINACA-D4	
8.22.61	N-(1-Amino-3-methyl-1-oxobutan-2-yl)-2-(cylohexyl-Me)-1H-indazole)-3-carboxamide	AB-CHMINACA 2'-indazole isomer
8.22.62	N-(1-Amino-3,3-dImethyl-1-oxobutan-2-yl)-1-(cylohexyl-Me)-1H-indazole)-3-carboxamide	MAB-CHMINACA, ADB-CHMINACA
8.22.63	MAB-CHMINACA-D4	

Ref	Substance	Other names
8.22.64	N-(1-MeO-3-methyl-1-oxobutan-2-yl)-1-(cylohexyl-Me)-1H-indazole)-3-carboxamide	MA-CHMINACA
8.22.65	N-(1-MeO-3,3-dimethyl-1-oxobutan-2-yl)-1-(cylohexyl-Me)-1H-indazole)-3-carboxamide	MDMB-CHMINACA
8.22.66	N-(1-Amino-1-oxo-3-phenylpropan-2-yl)-1-(5-Fl-pentyl) indazole-3-carboxamide	PX-2
8.22.67	N-(1-Amino-1-oxo-3-phenylpropan-2-yl)-1-(cyclohexyl-Mel) indazole-3-carboxamide	APP-CHMINACA, PX-3
8.22.68	N-(1-Me-1-Ph-ethyl)-1-pentyl-1H-indazole-3-carboxamide	CUMYL-PINACA, SGT-24
8.22.69	N-(1-Me-1-Ph-ethyl)-1-(5-Fl-pentyl)-1H-indazole-3-carboxamide	5F-CUMYL-PINACA, SGT-25
8.22.70	N-(1-Me-1-(4F-Ph)-ethyl)-1-(5-Fl-pentyl)-1H-indazole-3-carboxamide	SGT-65
8.22.71	N-(1-Me-1-(4Cl-Ph)-ethyl)-1-(5-Fl-pentyl)-1H-indazole-3-carboxamide	SGT-157
8.22.72	N-(1-Phenylpropyl)-1-(4-CN-butyl)-1H-indazole-3-carboxamide	Ethylbenzyl-CYBINACA
8.22.73	N-(1-Me-1-Ph-ethyl)-1-(4-CN-butyl)-1H-indazole-3-carboxamide	4-CN-CUMYL-BUTINACA, SGT-78
8.22.74	N-(1-Me-1-Ph-ethyl)-2-(4-CN-butyl)-2H-indazole-3-carboxamide	4-CN-CUMYL-BUTINACA isomer 2
8.22.75	N-(1-Me-1-Ph-ethyl)-1-[(tetrahydropyran-4-yl)nethyl]-1H-indazole-3-carboxamide	CUMYL-THPINACA
8.22.76	N-Cumyl-1-(2-(piperidin-1-yl)ethyl)-indazole carboxamide	STG-234
8.22.77	N-Cumyl-1-(2-(4,4-DiF-piperidin-1-yl)ethyl)-indazole carboxamide	STG-235
8.22.78	N-(2,2-DiMe-1-phenylpropyl)-1-(5-Fl pentyl)-indazole-3-carboxamide	5F-TBB-PINACA

8.23	Quinolinyl indazole carboxamides	
8.23.1	Quinolin-8-yl-1-pentyl-1H-indazole-3-carboxamide	THJ
8.23.2	Quinolin-8-yl-1-(5-fluoropentyl)-1H-indazole-3-carboxamide	5Fl -THJ
8.23.3	Dihydroquinolin-l-yl-1-pentyl-1H-indazole-3-carboxamide	SGT-88

8.24	Indazole carboxylates	
8.24.1	1-(4-Flbenzyl)-indazole- 3-(Me-carboxylate)	MFUBINAC
8.24.2	Isobutyl-1-pentyl-1H-indazole-3-carboxylate	
8.24.3	1-MeO-3,3-dimethyl-1-oxobut-2-yl-1-(cyclohexylmethyl)-1H-indazole-3-carboxylate	MO-CHMINACA

8.25	Naphthyl indazole carboxylates	
8.25.1	Naphthalenyl-pentylindazole carboxylate	SDB-005
8.25.2	Naphthalenyl-(5-Fl-pentyl)indazole carboxylate	5-Fl-SDB-005
8.25.3	Naphthalenyl-(2-Fl phenyl)indazole carboxylate	3-CAF

8.26	Adamantyl indazole carboxylates	
8.26.1	Adamantyl-1-pentyl-1H-insazole carboxylate	APINAC, AKB-57
8.26.2	Adamntyl-1-(5F-pentyl)-1H-indazole carboxylate	5F-APINAC, 5F-AKB-57

Ref	Substance	Other names
8.27	**Quinolinyl indazole carboxylates**	
8.27.1	Quinolin-8-yl-1-pentyl-1H-indazole-3-carboxylate	NPB-22
8.27.2	Quinolin-8-yl-1-(5-Fl-pentyl)-1H-indazole-3-carboxylate	5-Fl-NPB-22
8.27.3	Quinolin-8-yl -1-(4-Fl-benzyl)-1H-indazole-3-carboxylate	FUB-NPB-22
8.28	**Pyrrolidinyl indazole methanones**	
8.28.1	1-(5Fpentyl)-1H-indazol-3-ylpyrrolidin-1-yl methanone	5F-PY-PINACA
	(5) Benzimidazole core	
8.29	**Naphthoyl benzimidazoles**	
8.29.1	Naphththalen-1-yl(1-pentyl-1H-benzo[d]imidazol-2-yl)methanone	JWH-018 benzimidazole analogue
8.29.2	Naphththalen-1-yl(1-(5-Fl-pentyl)-1H-benzo[d]imidazol-2-yl) methanone	AM-2201 benzimidazole , FUBIMINA
	(6) Carbazole core	
8.30	**Naphthoyl carbazoles**	
8.30.1	3-(1-naphthoyl)-9-pentylcarbazole	EG-018
8.30.2	3-(1-naphthoyl)-9-(5-fluoropentyl)carbazole	EG-2201
8.31	**Other carbazoles**	
8.31.1	Me-2-(9-(cuclohexylMe)-9H-carbazole-3-carboxamido)-3,3-DiMebutanoate	MDMB-CHMCZCA
	(7) Azaindole core	
8.32	**Azaindole carboxamides**	
8.32.1	1-(5-Fl-pentyl)-N-(naphthalen-1-yl)-1H-pyrrolo[3,2-c]pyridine-3-carboxamide	5-Fl-PCN, 5F-MN-21
8.32.2	1-(4-CN-butyl)-N-cumyl-1H-pyrollo[2,3-b]pyridine-3-carboxamide	Cumyl-4-CN-B7AICA
8.32.3	1-(5-Fl-pentyl)-N-cumyl-1H-pyrollo[2,3-b]pyridine-3-carboxamide	5F-Cumyl-P7AICA
8.32.4	1-(4-Fl benzyl)-N-(1-amino-3-methyl-1-oxobutan-2-yl)-1H-pyrollo[2,3-b]pyridine-3-carboxamide	AB-7-FUBAICA
8.32.5	1-(5-Fl-pentyl)-quinolin-8-yl-azaindole carboxylate	5F-7-QUPAIC
8.32.6	2-(1-(5F-pentyl)-1H-pyrrolo[3,2-b]pyridine-3-carboxamido-3,3-dimethylbutanoate	5F-MDMB-P4AICA
8.32.7		5F-MDMB-P6AICA
	(8) Pyrazole core	
8.33	**Pyrazole carboxamides**	
8.33.1	1-CHM-5-(4F-Ph) pyrazole carboxamide-N-(1-NH2-3-Me-1-Oxobutanoate)	AB-CHFUPYCA, AB-CHMFUPPYCA
8.33.2	1-CHM-3-(4F-Ph) pyrazole carboxamide-N-(1-NH2-3-Me-1-Oxobutanoate)	AB-CHFUPYCA, AB-CHMFUPPYCA

Ref	Substance	Other names
8.33.3	1-(5-FIP)-5-(4-F-Ph) pyrazole carboxamide-N-(1-NH2-3-Me-1-Oxobutanoate) [?]	5F-AB-FUPPYCA, AZ-037
8.33.4	1-(5-FIP)-3-(4-F-Ph) pyrazole carboxamide-N-(1-NH2-3,3-diMe-1-Oxobutanoate)	5F-ADB-FUPYCA
8.33.5	2-(5-FIP)-5-(4-F-Ph) pyrazole carboxamide-N-(1-NH2-3-Me-1-Oxobutanoate) [?	
8.33.6	[Note: 'AZ-037' positional arrangement around pyrazole core is ambiguous]	
	(9) Carbolin-1-one core	
8.34	**Carbolin-1-one core**	
8.34.1	2-Cumyl-5-pentyl-gamma-carbolin-1-one	Cumyl PeGaClone, SGT-151
8.34.2	2-Cumyl-5-(5F-pentyl)-gamma-carbolin-1-one	5F-Cumyl PeGaClone
8.35	**Other synthetic cannabinoids**	
8.35.1	2-(3-Hydroxycyclohexyl)-5-(1,1-dimethylhexyl)phenol	CP 47,497 (C6 homologue)
8.35.2	2-(3-Hydroxycyclohexyl)-5-(1,1-dimethylheptyl)phenol	CP 47,497
8.35.3	2-(3-Hydroxycyclohexyl)-5-(1,1-dimethylheptyl)phenol-D5	
8.35.4	2-(3-Hydroxycyclohexyl)-5-(1,1-dimethylheptyl)phenol-D11	
8.35.5	2-(3-Hydroxycyclohexyl)-5-(1,1-dimethyloctyl)phenol	CP 47,497 (C8 homologue)
8.35.6	2-(3-Hydroxycyclohexyl)-5-(1,1-dimethyloctyl)phenol-D7	CP 47,497 (C8 homologue)-D7
8.35.7	2-(3-Hydroxycyclohexyl)-5-(1,1-dimethylnonyl)phenol	CP 47,497 (C9 homologue)
8.35.8	2-(2(3-Hydroxypropyl)-5-hydroxycyclohexyl)-5-(1,1-dimethyl-heptyl)phenol	CP 55,940
8.35.9	2-(2(3-Hydroxypropyl)-5-hydroxycyclohexyl)-5-(1,1-di-methylheptyl)phenol-D11	CP 55,940-D11
8.35.10	1,1-Dimethylheptyl-11-hydroxy-THC	HU-210
8.35.11	1,1-Dimethylheptyl-11-hydroxy-THC-D6	
8.35.12	HU-243	HU-243
8.35.13	HU-243-D6	
8.35.14	HU-308	
8.35.15	Pravadoline	WIN 48,098
8.35.16	6-Bromopravadoline	WIN 54,461
8.35.17		WIN 55,212-2
8.35.18	1-Naphthalenyl -1-(4-pentyloxy)naphthenyl methanone	CB-13 or CRA-13
8.35.19		A-796,260 (LTI-258)
8.35.20		A-796,260 impurity
8.35.21		A-836,339
8.35.22		ORG 28611
8.35.23		URB-754
8.35.24	3-(2-MeObenzyl)-5-MeO-7-pentyl-2H-1-benzopyran-2-one	PSB-SB1202
8.35.25	BAY 59-3074	

Ref	Substance	Other names

8.36	Mixed standards	
8.36.1	Spice Mix : JWH-200, JWH-250, HU-211	
8.36.2	CP-47,497 & CP-47,497 C8 homologue	
8.36.3	Spice Mix 2 : JWH-019, JWH-081 , JWH-122 and AM2201	
8.36.4	Spice Mix 3 : RCS-4 & -8, JWH 203 & 210, AM2233	
8.36.5	Synth cannabinoid Mix 1 : JWH-018, -073, -122, -210, -250, AM-2201, MAM-2201	
8.36.6	UR-144, 5-Cl-UR-144, XLR-144 + UR-144 & XLR-144 degradants	
8.36.7	Synth cannabinoid mix 3 : PB22, 5F-PB-22, 5F-PB-22 (3-OH Quinolynyl),	
8.36.8	FUB-PB-22, FUB-UR-144 , MMB-FUBINACA, , 5F-NNEI, , NM-2201, THJ-2201	

9.0 Synthetic Cannabinoid Metabolites

Ref	Parent compound	Metabolite

9.1	Indole core	
9.1.1	JWH-007	N-(5-Hydroxypentyl) metabolite
9.1.2		N-Pentanoic acid metabolite
9.1.3		N-Pentanoic acid metabolite-D4
9.1.4	JWH-016	N-(4-Hydroxybutyl) metabolite
9.1.5		N-Butanoic metabolite
9.1.6		N-Butanoic metabolite-D4
9.1.7	JWH-018	2-Hydroxyindole metabolite
9.1.8		2-Hydroxyindole metabolite-D9
9.1.9		4-Hydroxyindole metabolite
9.1.10		4-Hydroxyindole metabolite-D9
9.1.11		5-Hydroxyindole metabolite
9.1.12		5-Hydroxyindole metabolite-D9
9.1.13		6-Hydroxyindole metabolite
9.1.14		6-Hydroxyindole metabolite-D9
9.1.15		7-Hydroxyindole metabolite
9.1.16		7-Hydroxyindole metabolite-D9
9.1.17		N-Propanoic acid metabolite
9.1.18		N-Pentanoic acid metabolite
9.1.19		N-Pentanoic acid metabolite-D4
9.1.20		N-Pentanoic acid metabolite-D5
9.1.21		N-(2-Hydroxypentyl) metabolite
9.1.22		N-(3-Hydroxypentyl) metabolite
9.1.23		N-(4-Hydroxypentyl) metabolite
9.1.24		N-(4-Hydroxypentyl) metabolite-D5
9.1.25		N-(5-Hydroxypentyl) metabolite
9.1.26		N-(5-Hydroxypentyl) metabolite-D5
9.1.27		N-(5-Hydroxypentyl) metabolite glucuronide

Ref	Parent compound	Metabolite
9.1.28		N-(5-Hydroxypentyl) metabolite glucuronide-D5
9.1.29		N-(4-Keto-pentyl) metabolite
9.1.30	JWH-019	5-Hydroxyindole metabolite
9.1.31		N-(5-Hydroxyhexyl) metabolite
9.1.32		N-(5-Hydroxyhexyl) metabolite-D5
9.1.33		N-(6-Hydroxyhexyl) metabolite
9.1.34		N-(6-Hydroxyhexyl) metab glucuronide
9.1.35	JWH-072	N-Propanoic acid metabolite
9.1.36	JWH-073	2-Hydroxyindole metabolite
9.1.37		2-Hydroxyindole metabolite-D7
9.1.38		4-Hydroxyindole metabolite
9.1.39		4-Hydroxyindole metabolite-D7
9.1.40		5-Hydroxyindole metabolite
9.1.41		5-Hydroxyindole metabolite-D7
9.1.42		6-Hydroxyindole metabolite
9.1.43		6-Hydroxyindole metabolite-D7
9.1.44		7-Hydroxyindole metabolite
9.1.45		7-Hydroxyindole metabolite -D7
9.1.46		N-Butanoic acid metabolite
9.1.47		N-Butanoic acid metabolite-D4
9.1.48		N-Butanoic acid metabolite-D5
9.1.49		N-(2-Hydroxybutyl) metabolite
9.1.50		N-(3-Hydroxybutyl) metabolite
9.1.51		N-(3-Hydroxybutyl) metabolite-D5
9.1.52		N-(4-Hydroxybutyl) metabolite
9.1.53		N-(4-Hydroxybutyl) metabolite-D5
9.1.54		N-(4-OH butyl)-β-D-glucuronide
9.1.55	JWH-081	N-(4-Hydroxypentyl) metabolite
9.1.56		N-(4-Hydroxypentyl) metabolite-D5
9.1.57		N-(5-Hydroxypentyl) metabolite
9.1.58		N-(5-Hydroxypentyl) metabolite-D5
9.1.59		N-Pentanoic acid metabolite
9.1.60		N-Pentanoic acid metabolite-D4
9.1.61		N-Pentanoic acid metabolite-D5
9.1.62		4-Hydroxynaphthyl metabolite
9.1.63	JWH-098	N-(5-Hydroxypentyl) metabolite
9.1.64		N-Pentanoic acid metabolite
9.1.65		N-Pentanoic acid metabolite-D4
9.1.66	JWH-122	N-(4-Hydroxypentyl) metabolite
9.1.67		N-(4-Hydroxypentyl) metabolite-D4
9.1.68		N-(5-Hydroxypentyl) metabolite
9.1.69		N-(5-Hydroxypentyl) metabolite-D5
9.1.70		N-Pentanoic acid metabolite
9.1.71		N-Pentanoic acid metabolite-D4
9.1.72	JWH-122 2-methylnaphthyl analogue	N-(5-Hydroxypentyl) metabolite

Ref	Parent compound	Metabolite
9.1.73	JWH-200	4-Hydroxyindole metabolite
9.1.74		5-Hydroxyindole metabolite
9.1.75		6-Hydroxyindole metabolite
9.1.76		7-Hydroxyindole metabolite
9.1.77	JWH-203	N-(4-Hydroxypentyl) metabolite
9.1.78		N-(5-Hydroxypentyl) metabolite
9.1.79		N-Pentanoic acid metabolite
9.1.80		N-Pentanoic acid metabolite-D4
9.1.81		N-Pentanoic acid metabolite-D5
9.1.82	JWH-210	N-(5-Carboxypentyl) metabolite
9.1.83		N-(4-Hydroxypentyl) metabolite
9.1.84		N-(4-Hydroxypentyl) metabolite-D5
9.1.85		N-(5-Hydroxypentyl) metabolite
9.1.86		5-Hydroxyindole metabolite
9.1.87	JWH-250	5-Hydroxyindole metabolite
9.1.88		N-(4-Hydroxypentyl) metabolite
9.1.89		N-(4-Hydroxypentyl) metabolite-D5
9.1.90		N-(5-Hydroxypentyl) metabolite
9.1.91		N-(5-Hydroxypentyl) metabolite-D5
9.1.92		N-(5-Carboxypentyl) metabolite
9.1.93		N-(5-Carboxypentyl) metabolite-D4
9.1.94	JWH-398	N-(5-Hydroxypentyl) metabolite
9.1.95		N-(4-Hydroxypentyl) metabolite
9.1.96		N-(4-Hydroxypentyl) metabolite-D5
9.1.97		N-Pentanoic acid metabolite
9.1.98		N-Pentanoic acid metabolite-D5
9.1.99	AM694	N-(5-Hydroxypentyl) metabolite
9.1.100		N-Pentanoic acid metabolite
9.1.101		N-Pentanoic acid metabolite -D5
9.1.102	AM2201	2-Hydroxyindole metabolite
9.1.103	(Note: loss of terminal FI can lead to JWH-018 metabolites)	5-Hydroxyindole metabolite
9.1.104		6-Hydroxyindole metabolite
9.1.105		7-Hydroxyindole metabolite
9.1.106		N-(4-Hydroxypentyl) metabolite
9.1.107		N-(4-Hydroxypentyl) metabolite-D5
9.1.108		N-(5-Hydroxypentyl) metabolite
9.1.109	MAM2201	N-Pentanoic acid metabolite
9.1.110	(Note: loss of terminal FI can lead to JWH-122 metabolites)	N-Pentanoic acid metabolite-D5
9.1.111		N-(4-Hydroxypentyl) metabolite
9.1.112		N-(4-Hydroxypentyl) metabolite-D5 (on indole)
9.1.113		N-Pentanoic acid metabolite
9.1.114	RCS-4	N-(5-Hydroxypentyl) metabolite
9.1.115		N-(5-Hydroxypentyl) metabolite-D5
9.1.116		N-(4-Hydroxypentyl) metabolite
9.1.117		N-(4-Hydroxypentyl) metabolite-D5

Ref	Parent compound	Metabolite
9.1.118		N-Pentanoic acid metabolite
9.1.119		N-Pentanoic acid metabolite-D4
9.1.120		N-Pentanoic acid metabolite-D5
9.1.121		N-(4-Hydroxypentyl)-4-hydroxy metab
9.1.122		N-(5-Hydroxypentyl)-4-hydroxy metab
9.1.123		N-(4-Oxopentyl)-4-hydroxy metab
9.1.124		4-Hydroxyphenyl metabolite
9.1.125	RCS-4 2-methoxy homologue	N-(5-Hydroxypentyl) metabolite
9.1.126		N-Pentanoic acid metabolite
9.1.127		N-Pentanoic acid metabolite-D4
9.1.128	RCS-4 3-methoxy homologue	N-(5-Hydroxypentyl) metabolite
9.1.129		N-Pentanoic acid metabolite
9.1.131		N-Pentanoic acid metabolite-D4
9.1.132	UR-144	N-(2-Hydroxypentyl) metabolite
9.1.133		N-(4-Hydroxypentyl) metabolite
9.1.134		N-(4-Hydroxypentyl) metabolite-D5
9.1.135		N-(5-Hydroxypentyl) metabolite
9.1.136		N-(5-Hydroxypentyl) metabolite-D5
9.1.137		N-Pentanoic acid metabolite
9.1.138		N-Pentanoic acid metabolite-D5
9.1.139	UR-144 degradent	N-Pentanoic acid metabolite
9.1.140	XLR11 (5F-UR-144)	N-(4-Hydroxypentyl) metabolite
9.1.141		N-(4-Hydroxypentyl) metabolite-D5
9.1.142		6-Hydroxyindole metabolite
9.1.143	APICA	N-(4-Hydroxypentyl) metabolite
9.1.144	5F-APICA (STS-135)	N-(4-Hydroxypentyl) metabolite
9.1.145	ADBICA	N-(4-Hydroxypentyl) metabolite
9.1.146		N-(5-Hydroxypentyl) metabolite
9.1.147		N-Pentanoic acid metabolite
9.1.148	MDMB-CHMICA	O-desmethyl acid
9.1.149	MMB-FUBICA	O-desmethyl acid
9.1.150	MDMB-FUBICA	O-desmethyl acid
9.1.151	5F-MDMB-PICA	O-desmethyl acid
9.1.152	CUMYL-PICA	N-Pentanoic acid metabolite
9.1.153	PB-22	3-Carboxyindole metabolite
9.1.154		N-(4-Hydroxypentyl) metabolite
9.1.155		N-(4-Hydroxypentyl) metabolite-D5 (on indole)
9.1.156		N-(5-Hydroxypentyl) metabolite
9.1.157		N-(4-OH pentyl) 3-carboxyindole
9.1.158		N-(5-OH pentyl) 3-carboxyindole
9.1.159		N-Pentanoic acid metabolite
9.1.160		N-Pentanoic acid metabolite-D5 (on indole)
9.1.161	5-FI -PB22	3-Carboxyindole metabolite
9.1.162	FUB-PB22	3-Carboxyindole metabolite
9.1.163	BB-22	3-Carboxyindole metabolite

Ref	Parent compound	Metabolite
9.2	**Indazole core**	
9.2.1	FUBIMINA	N-Pentanoic acid metabolite
9.2.2	MN-18	N-(5-Hydroxypentyl) metabolite
9.2.3	THJ-2201	N-(5-Hydroxypentyl) metabolite
9.2.4		N-Pentanoic acid metabolite
9.2.5	AKB-48 (APINACA)	N-(4-Hydroxypentyl) metabolite
9.2.6		N-(5-Hydroxypentyl) metabolite
9.2.7		N-(5-Hydroxypentyl) metabolite-D4
9.2.8		N-Pentanoic acid metabolite
9.2.9	5-FI AKB-48	N-(4-Hydroxypentyl) metabolite
9.2.10		N-Pentanoic acid metabolite
9.2.11	AB-PINACA	N-(4-Hydroxypentyl) metabolite
9.2.12		5-Hydroxypentyl metabolite
9.2.13		N-Pentanoic acid metabolite
9.2.14	5-FI AB-PINACA	N-(4-Hydroxypentyl) metabolite
9.2.15	ADB-PINACA	N-(4-Hydroxypentyl) metabolite
9.2.16		N-(5-Hydroxypentyl) metabolite
9.2.17		N-Pentanoic acid metabolite
9.2.18		N-Pentanoic acid metabolite-D4
9.2.19	AMB	N-Pentanoic acid metabolite
9.2.20		N-(5-Hydroxypentyl) metabolite
9.2.21	5-FI-AMB	M6 Metab (-OMe replaced by -OH & 5F by COOH)
9.2.22		M7 Metab (terminal -OMe replaced by -OH)
9.2.23		N-(5-Hydroxypentyl) metabolite
9.2.24		N-(5-OHpentyl) and -OMe replaced by -OH
9.2.25		N-Pentanoic acid metabolite
9.2.26	AB-CHMINACA	M1A (4 -OH on cyclohexyl ring)
9.2.27		M1B (3 -OH on cyclohexyl ring)
9.2.28		M2 (terminal -NH2 replaced by -OH)
9.2.29		M3A (dihydroxylated)
9.2.30		M4 (carboxamide replaced by carboxyl)
9.2.31		M4-D4
9.2.32		M5A (ring hydroxylated, 2nd structure lost)
9.2.33		M6 (carboxylated)
9.2.34	MAB-CHMINACA	M1 (4-OH on cyclohexyl ring)
9.2.35		M2 (terminal -NH2 replaced by -OH)
9.2.36		M3 (-NH2 replaced by -OH & 4 -OH on CHX)
9.2.37		M6 (carboxylated on terminal carbon)
9.2.38		M7 (-NH2 rep by -OH & -COOH on term C)
9.2.39		M10 (-NH2 eliminated and lactone formed)
9.2.40		M11 (-OH on CHX ring & on terminal carbon)
9.2.41	AB-FUBINACA	M3 (terminal -NH2 replaced by -OH)
9.2.42		M4 (caboxylic acid on indazole)
9.2.43		

Ref	Parent compound	Metabolite
9.2.44	ADB-FUBINACA	(terminal -NH2 replaced by -OH)
9.2.45		(terminal -NH2 replaced by -OMe)
9.2.46		
9.2.47	MDMB-FUBINACA	M1 (terminal -OMe replaced by OH
9.2.48		
9.2.49	5F-MDMB-PINACA (5F-ADB)	O-desmethyl acid
9.2.50		N-(5-Hydroxypentyl) metabolite
9.2.51	CUMYL-BUTINACA	N-(4-Hydroxybutyl) metabolite

9.3	Other materials	
9.3.1	CP 47,497	C-7 Hydroxy metabolite
9.3.2	CP 47,497 C-8 homolog	C-8 Hydroxy metabolite
9.3.3	MDMB-CHMCZCA	M3 (COOH replaces sidechain)
9.3.4	FUBIMINA	N-(5-Hydroxypentyl) metabolite

10.0 Other NPS Chemicals

Ref	Substance	Other names
10.1	**Cocaine-like materials**	
10.1.1	Benzocaine	
10.1.2	Benzocaine -D4	
10.1.3	Caffeine	
10.1.4	Caffeine-D9	
10.1.5	Cinchocaine	Dibucaine, Nupercaine
10.1.6	Dimethocaine	3-DiEtAmino-2,2-dimethylpropy-4-aminobenzoate
10.1.7	N-(2,6-DiMePhenyl)-1-piperadineacetamide	(Lidocaine with DiEt-amino cyclised)
10.1.8	4-Fluorococaine	
10.1.9	4-Fluorotropacocaine	3β-(p-Fluorobenzoyloxy)tropane, 3-p-FBT
10.1.10	Lidocaine (Lignocaine)	2-DiEtAmino-N-(2,6-DiMePhenyl)acetamide
10.1.11	Lidocaine-D10	
10.1.12	Mepivacaine	Carbocaine,
10.1.13	Nitracaine	3-DiEtAmino-2,2-dimethylpropy-4-nitrobenzoate
10.1.14	Octacaine	3-(Diethylamino)-N-phenylbutanamide
10.1.15	Prilocaine	N-(2-MePhenyl)-2-(propylamino)propanamide
10.1.16	Procainamide	
10.1.17	Procaine	2-Ethylamino-4-aminobenzoate
10.1.18	Procaine-D4	
10.1.19	RTI 111	Dichloropane
10.1.20	RTI 111-D3	
10.1.21	Synephrine	Oxedrine
10.1.22	Tetracaine	
10.1.23	Tetracaine-D6	

Ref	Substance	Other names
10.2	**Benzodiazepine-like materials**	
10.2.1	Adinazolam	
10.2.2	Bentazepam	Thiadipone
10.2.3	Clonazolam	Clonitrazolam
10.2.4	Clonazolam-D4	
10.2.5	Cloniprazepam	
10.2.6	Deschloroetizolam	
10.2.7	Diclazepam	
10.2.8	Diclazepam-D4	
10.2.9	Estazolam	
10.2.10	Etizolam	
10.2.11	Etizolam-D3	
10.2.12	Etizolam-D8	
10.2.13	Flualprazolam	
10.2.14	Flubromazepam	
10.2.15	Flubromazepam isomer (Fl and Br reversed)	Iso-flubromazepam
10.2.16	Flubromazolam	
10.2.17	Flunitrazolam	
10.2.18	Flurazepam	
10.2.19	Flutoprazepam (Japanese pharmaceutical)	
10.2.20	Fonazepam	Desmethylflunitrazepam
10.2.21	9-Hydroxyetizolam	
10.2.22	3-Hydroxyflubromazepam	
10.2.23	3-Hydroxyflunitrazepam	
10.2.24	3-Hydroxyphenazepam	
10.2.25	3-Hydroxyphenazepam-D4	
10.2.26	Meclonazepam	
10.2.27	Meclonazepam-D3	
10.2.28	Meclonazepam-D4	
10.2.29	Metizolam	
10.2.30	Nifoxipam	
10.2.31	Nifoxipam-D4	
10.2.32	Nimetazepam	
10.2.33	Nimetazepam-D3	
10.2.34	Nitrazolam	
10.2.35	Phenazepam	
10.2.36	Phenazepam-D4	
10.2.37	Pivoxazepam	
10.2.38	Pyrazolam	
10.2.39	Ru 07-3953	
10.2.40	Ru 07-4065	N-Me form of Ru 07-3953
10.2.41	Tofisopam	
10.2.42	Mixed standard : 11 NPS benzos, each at 100ug/ml	
10.2.43	Mixed standard : 7 NPS benzos, each at 100ug/ml	

Ref	Substance	Other names
10.3	**Other pharmaceuticals**	
10.3.1	Benzydamine	
10.3.2	Dextromethorphan HBr	DXM
10.3.3	Dextromethorphan-D3	
10.3.4	Fencamfamine	
10.3.5	Fencamfamine-D5	
10.3.6	Gabapentin	
10.3.7	Gabapentin-D4	
10.3.8	Gabapentin-D10 (on cyclohexyl)	
10.3.9	Gabapentin-13C 3	
10.3.10	Lefetamine	
10.3.11	Methylphenidate	
10.3.12	Methylphenidate-D9	
10.3.13	Methylphenidate-D10	
10.3.14	Phenibut	
10.3.15	Pregabalin	Lyrica, 3-Aminomethyl-5-methylhexanoic acid
10.3.16	Pregabalin-D4	
10.3.17	Pregabalin-D6	
10.3.18	Pregabalin- 13C, D3	
10.3.19	Propylhexedrine	Benzedrex, Oberin
10.3.20	Quetiapine	
10.3.21	Quetiapine-D8	
10.3.22	Tramadol	
10.3.23	Tramadol-D6	
10.3.24	Tramadol-13C, D3	
10.4	**Methaqualone-related materials**	
10.4.1	Afloqualone	
10.4.2	Diproqualone	
10.4.3	Etaqualome	
10.4.4	Mebroqualone	
10.4.5	Methaqualone	
10.4.6	Methaqualone-D5	
10.4.7	Methaqualone-D7	
10.5	**Methylphenidate ('Ritalin')-related materials**	
10.5.1	4-Fluoromethylphenidate	
10.5.2	4-Me-methylphenidate	
10.5.3	3,4-Dichloromethylphenidate	3,4-DCMP
10.5.4	Ethylphenidate	Ethyl homologue of Methylphenidate
10.5.5	4-Fluoroethylphenidate	
10.5.6	Propylphenidate	
10.5.7	Isopropylphenidate	

Ref	Substance	Other names
10.5.8	Methylnaphthidate	HDMP-28
10.5.9	Ethylnaphthidate	HDEP-28

10.6	Modafinil-related materials	
10.6.1	Fluorafinil, CRL-40,941	N-HO-4,4'-difluoro analogue of Modafinil
10.6.2	Modafiendz	N-Me-4,4'-difluoro analogue of Modafinil
10.6.3	Fluorenol	9-Hydroxyfluorene

10.7	Phenmetrazine-related materials	
10.7.1	Phenmetrazine	Preludin'
10.7.2	Phenmetrazine-D5	
10.7.3	Phendimetrazine	N-Me Preludin (pro-drug for phenmetrazine)
10.7.4	Phendimetrazine-D5	
10.7.5	3-Fluorophenmetrazine	
10.7.6	3-Methyl-2-(p-tolyl)morpholine	4-MPM

10.8	'Designer' forms of pharmaceuticals	
10.8.1	Camfetamine	N-Methyl homologue of Fencamfamine
10.8.2	Desmethylprodine	Analogue of Pethidine ("MPPP")
10.8.3	O-Desmethyltramadol	Active metabolite of Tramadol
10.8.4	O-Desmethyltramadol-D6	
10.8.5	Desomorphine	'Krokodil'
10.8.6	Desomorphine-D3	
10.8.7	Etaqualone	(2-Ethylphenyl) homologue of Methaqualone
10.8.8	Etaqualone-D3	
10.8.9	Mebroqualone	2-Br analogue of Methaqualone

10.9	Lefetamine-related materials	
10.9.1	Ephenidine	
10.9.2	Diphenidine	
10.9.3	2-Methoxyphenidine	MXP
10.9.4	Fluorolintane	

10.10	Pipradrol-related materials	
10.10.1	Pipradrol	
10.10.2	Pipradrol-D5	
10.10.3	Diphenyl(piperidin-3-yl)methanol	Pipradrol 3-isomer
10.10.4	Diphenyl(piperidin-4-yl)methanol	Azacyclanol, Pipradrol 4-isomer
10.10.5	Diphenylmethylpiperidine	Desoxypipradrol, 2-DPMP
10.10.6	Diphenyl-2-pyrrolidinemethanol	Diphenylprolinol, D2PM
10.10.7	2-Diphenylmethylpyrrolidine	Desoxy-D2PM

Ref	Substance	Other names
10.11	**Plant chemicals**	
10.11.1	Arecoline	
10.11.2	Cathine	
10.11.3	Glaucine	
10.11.4	Harmaline	
10.11.5	Harmine	
10.11.6	Harmine-D3	
10.11.7	Tetrahydroharmine	
10.11.8	Hordenine	
10.11.9	Ibogaine	
10.11.10	Mitragynine	
10.11.11	Mitragynine-D3	
10.11.12	7-Hydroxymitraginine	
10.11.13	Paynantheine	
10.11.14	Salvinorin A	
10.11.15	Salvinorin B	
10.11.16	Scopolamine	
10.11.17	Scopolamine-D3	
10.11.18	Yangonin	
10.11.19	Yohimbine	
10.12	**Materials with alcohol-like effects**	
10.12.1	GHB	gamma-Hydroxybutyrate
10.12.2	GHB-D6	
10.12.3	GHB-13C- 2	
10.12.4	GBL	gamma-Butyrolactone
10.12.5	GVL	gamma-Valerolactone
10.12.6	1,4-BD	1,4-Butanediol
10.12.7	2M2B	2-Methyl-2-butanol
10.12.8	Methylpentynol	3-Methylpent-1-yn-3-ol
10.13	**Indanes**	
10.13.1	1-Aminoindane	
10.13.2	2-Aminoindane	2-AI
10.13.3	5-Aminoindane	5-AI
10.13.4	N-Methyl-2-aminoindane	NM2-AI
10.13.5	5-Iodoaminoindane	5-IAI
10.13.6	4,5-Methylenedioxyaminoindane	
10.13.7	5,6-Methylenedioxyaminoindane	MDAI
10.13.8	N-Methyl-5,6-methylenedioxy-2-aminoindane	MDMAI
10.13.9	5-Methoxy-2-aminoindane	5-MeO-2AI
10.13.10	5-Methoxy-6-methyl-2-aminoindane	MMAI
10.13.11	6,7-MDO-1,2,3,4-tetrahydroisoquinoline	TDIQ

Ref	Substance	Other names
10.14	**Thiophene analogues of amphetamines**	
10.14.1	alpha-Methyl-2-thiopheneethanamine	Thienoamphetamine; Thiopropamine
10.14.2	1-(Thiophen-2-yl)-2-methylaminopropane.HCl	Methiopropamine, MPA
10.14.3	1-(Thiophen-3-yl)-2-methylaminopropane.HCl	Methiopropamine 3' isomer, 3-MPA
10.15	**Benzofuran analogue of tryptamine**	
10.15.1	5-Methoxy-di-isobutyl-benzofuran	5-MeO DiBF
10.16	**Aminorex-related materials**	
10.16.1	4-Methylaminorex	
10.16.2	4,4'-Dimethylaminorex	4,4'-DMAR, 'Serotoni'
10.17	**Octodrine-related materials**	
10.17.1	1,3-Dimethylbutylamine	1,3-DMBA
10.17.2	1,3-Dimethylamylamine	Methylhexanamine, DMAA, Geranamine
10.17.3	Dimethylamylamine-D4	
10.17.4	1,4-Dimethylpentylamine	5-Me-2-hexanamine
10.17.5	1,5-Dimethylhexylamine	Octodrine
10.18	**Other materials**	
10.18.1	5-(2-Aminopropyl)indole	5-API, 5-IT
10.18.2	6-(2-Aminopropyl)indole	6-API, 6-IT
10.18.3	5-(2-Aminopropyl)-2,3-dihydro-1H-indene	5-APDI, IAP
10.18.4	2-Aminotetralin	2A-T
10.18.5	Bromantane	
10.18.6	Diclofensine	
10.18.7	Memantine	
10.18.8	Mephtetramine	MTTA
10.18.9	Methamnetamine	
10.18.10	Methylenedioxyaminotetralin	MDAT
10.18.11	Methoxypiperamide	MeOP, MEXP
10.18.12	3-[2-(2-methoxybenzylamino)ethyl]-1-H-quinazoline-2,4-dione	RH-34
10.18.13	N-Me-N-(4-Me-phenyl)-2-Me-propanamide	2-NMC
10.18.14	Xylazine	

Ref	Substance	Other names
11.0	**Aryl Cyclohexylamines**	
11.1	Phencyclidine	PCP
11.2	Phencyclidine-D5	
11.3	3-Hydroxy-PCP	3-OH-PCP (OH on phenyl ring)
11.4	3-Methoxy phencyclidine	3-MeO-PCP
11.5	3-Methoxy phencyclidine-D3	
11.6	4-Methoxy phencyclidine	4-MeO-PCP
11.7	4-Methoxy phencyclidine-D4	
11.8	1-(1-Phenylcyclohexyl)-4-hydroxypiperidine	4-OH-PCP, PHP(OH on piperidine ring)
11.9	trans-4-Phenyl-4-piperidinocyclohexanol	PCHP, 4-PPC (PCP metabolite)
11.10	N-Ethylphenylcyclohexylamine	Eticyclidine, PCE
11.11	3-Methoxy eticyclidine	3-MeO-PCE
11.12	4-Methoxy eticyclidine	4-MeO-PCE
11.13	N-Propyl-1-phenylcyclohexylamine	PCPr, Phencyclamine
11.14	N-(3-Methoxypropyl)-1-phenylcyclohexylamine	PCMPA
11.15	N-(2-Ethoxyethyl)-1-phenylcyclohexanamine	PCEEA
11.16	4-(1-(3-Methoxyphenyl)cyclohexyl)morpholine	3-MeO-PCMo
11.17	Benocyclidine	Benzothiophenylcyclohexylpiperidine, BTCP
11.18	Benocyclidine-D10	BTCP-D10
11.19	Ketamine	
11.20	Ketamine-D4	
11.21	Ketamine-D6	
11.22	(S)-Ketamine	
11.23	(R)-Ketamine	
11.24	2-Methoxyketamine	2-MK
11.25	Norketamine	
11.26	Norketamine-D4	
11.27	Dehydronorketamine	
11.28	Dehydronorketamine-D4	
11.29	N-Ethylnorketamine	NEK
11.30	N-Propylnorketamine	
11.31	Deschloroketamine	
11.32	Deschloro-N-ethyl-ketamine	
11.33	2-Fluoro deschloroketamine	
11.34	Methoxetamine	MXE
11.35	Methoxetamine-D3	
11.36	Methoxmetamine	MMXE (nor-methoxetamine)
11.37	Tiletamine	
11.38	Tiletamine-D5	
11.39	Rolicyclidine	PCPy
11.40	Rolicyclidine-D5	
11.41	Tenocyclidine	TCP
11.42	Tenocyclidine-D10	

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LGC offers the most extensive and up-to-date range of fentanyls reference materials.

The challenge

The illicit use of synthetic opioids, and particularly fentanyls, has become an increasing cause for concern, particularly in North America and Europe. These materials produce their effects via the mu-opioid receptors which respond to morphine, but fentanyls have a significantly greater potency, so that overdose and death by respiratory arrest is a serious risk. Where fentanyls have entered the opioid misuse market, deaths by overdose have increased significantly.

Although encountered as diverted pharmaceuticals, fentanyls are also being illicitly synthesised. As well as being sold as heroin replacements or 'boosters', fentanyls have increasingly been seen in the form of counterfeit pharmaceuticals, usually intended to have the appearance of tablets containing oxycodone or hydrocodone, such as Vicodin or Oxycontin. In North America, where a significant population of abusers of prescription opioids already existed, circulation and use of fentanyl-containing tablets have become widespread, with many deaths resulting, to the extent that a 'health emergency' has recently been declared in British Columbia (Canada).

The potency of fentanyls means that seizures suspected to contain them should be handled with caution, and personal protective equipment is advisable to prevent accidental ingestion or contamination. It also means that there are usually only very low levels of material to be found in biological samples, so that they may be overlooked, particularly if other 'traditional' opiates are present.

The US Centre for Disease Control (CDC) has issued a Health Advisory notice advising that, where there is a local increase in opiate overdoses, or if fentanyls have been identified in local drug seizures, fentanyls should be looked for in toxicology testing. Similarly, the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) has warned of a risk of under-reporting of fentanyls and called for enhanced forensic identification.

The LGC response

In response to the increasing problem of fentanyls and 'designer' versions, a range of reference materials have been produced for these materials, their precursors and their major metabolites.

LGC Standards provides the widest range of reference materials available from any single supplier. We work closely with leading manufacturers to provide improved access to reference materials, with an increasingly large range of parameters, for laboratories worldwide. LGC Standards has both extensive reference material sales experience and technical expertise that allows us to work in successful partnership with our customers.

Ref	Substance	Other names
12.0	**Fentanyls**	
12.1	**Precursors and impurities**	
12.1.1	4-Piperidone	
12.1.2	4-Anilopiperadine	
12.1.3	4-Anilino-1-benzylpiperidine	
12.1.4	N-Benzyl-4-piperidone	
12.1.5	N-Benzyl-3-Me-4-piperidone	
12.1.6	N-Phenethyl-4-piperidone	NPP
12.1.7	Despropionylfentanyl	4-ANPP
12.1.8	Despropionylfentanyl-D5	
12.1.9	Despropionyl-ortho-fluorofentanyl	2F-4-ANPP
12.1.10	Despropionyl-meta-fluorofentanyl	3F-4-ANPP
12.1.11	Despropionyl-para-fluorofentanyl	4F-4-ANPP
12.1.12	Despropionyl-ortho-Me fentanyl (Me on aniline ring)	2-Me-4-ANPP
12.1.13	Despropionyl-meta-Me fentanyl (Me on aniline ring)	3-Me-4-ANPP
12.1.14	Despropionyl-para-Me fentanyl (Me on aniline ring)	4-Me-4-ANPP
12.1.15	Despropionyl-3-Me-fentanyl (Me on piperidine ring)	3'-Me-4-ANPP
12.1.16	4-Anilino-1-benzylpiperidine	Benzyl analogue of 4-ANPP
12.2	**Fentanyl and other pharmaceutical fentanyls**	
12.2.1	**Alfentanils**	
12.2.1.1	Alfetanil	4-MeOMe on piperidine & 4-Et-2-Oxo-2-tetrazolin-1-yl ethyl
12.2.1.2	Alfetanil-D3	replacing phenethyl
12.2.2	**Carfentanyls**	
12.2.2.1	Carfentanil	4-Carboxymethyl on piperidine
12.2.2.2	Carfentanil-D5	
12.2.2.3	N-Me carfentanil	
12.2.2.4	Acetyl carfentanil	Acetyl replaces propionyl
12.2.2.5	Acetyl carfentanil-D3	
12.2.2.6	Benzyl carfentanil	Benzyl replaces phenethyl
12.2.3	**Fentanyls**	
12.2.3.1	Fentanyl	
12.2.3.2	Fentanyl-D5	
12.2.4	**Lofentanils**	
12.2.4.1	Lofentanil	Carfentanil plus 3-Me on piperidine
12.2.4.2	Lofentanil-D3	
12.2.5	**Remifentanils**	
12.2.5.1	Remifentanil	Carfentanil with 2-MeO carbonylethyl replacing Phenethyl
12.2.5.2	Remifentanil-13C6	
12.2.6	**Sufentanils**	
12.2.6.1	Sufentanil	4-MeOMe on piperidine & 2-Thienylethyl for phenethyl

Ref	Substance	Other names
12.2.6.2	Sufentanil-D3	
12.2.6.3	Sufentanil-D5	

13.0	Derivatives of Fentanyl	
13.1	**Substitution on aniline ring**	
13.1.1	ortho-Methylfentanyl	2-Me Fentanyl
13.1.2	meta-Methylfentanyl	3-Me Fentanyl
13.1.3	para-Methylfentanyl	4-Me Fentanyl
13.1.4	para-Methoxyfentanyl	4-MeO Fentanyl
13.1.5	ortho-Fluorofentanyl	2-Fluorofentanyl
13.1.6	meta-Fluorofentanyl	3-Fluorofentanyl
13.1.7	para-Fluorofentanyl	4-Fluorofentanyl
13.1.8	para-Fluorofentanyl-D3	
13.1.9	para-Fluorofentanyl-D5	
13.1.10	para-Chlorofentanyl	4-Chlorofentanyl
13.1.11	2'-Fluoro-ortho-fluorofentanyl	
13.1.12	3'-Fluoro-ortho-fluorofentanyl	
13.2	**Substitution on piperidine ring**	
13.2.1	3-Fluorofentanyl	
13.2.2	cis-3-Methylfentanyl	
13.2.3	cis-3-Methylfentanyl-D3	
13.2.4	trans-3-Methylfentanyl	
13.2.5	β-Hydroxy-3-Methylfentanyl	Ohmefentanyl (β-Hydroxy on phenethyl chain)
13.2.6	β-Hydroxy-3-Methylfentanyl-D3	
13.2.7	2-Hydroxyfentanyl	
13.2.8	2-Hydroxyfentanyl-D5	
13.2.9	2-Oxofentanyl	
13.2.10	2-Oxofentanyl-D5	
13.2.11	2'-Fluoro-ortho-fluoro-cis-3-methylfentanyl	
13.2.12	3'-Fluoro-ortho-fluoro-cis-3-methylfentanyl	
13.2.13	4'-Fluoro-para-fluoro-cis-3-methylfentanyl	
13.2.14	2'-Fluoro-para-fluoro-trans-3-methylfentanyl	
13.2.15	3'-Fluoro-para-fluoro-trans-3-methylfentanyl	
13.2.16	4'-Fluoro-para-fluoro-trans-3-methylfentanyl	
13.3	**Opening of piperidine ring**	
13.3.1	2,3-seco-Fentanyl	
13.3.2	Diampromide	
13.4	**Substitution on phenethyl ring and chain**	
13.4.1	alpha-Methylfentanyl	
13.4.2	alpha-Methylfentanyl-D3	

Ref	Substance	Other names
13.4.3	beta-Hydroxyfentanyl	
13.4.4	beta-Hydroxyfentanyl-D3	
13.4.5	beta-Methylfentanyl	
13.4.6	2'-Methyl fentanyl	Me on phenethyl ring
13.4.7	3'-Methyl fentanyl	Me on phenethyl ring
13.4.8	4'-Methyl fentanyl	Me on phenethyl ring
13.4.9	4'-Fluoro fentanyl	F on phenethyl ring
13.5	**Replacement of phenethyl group**	
13.5.1	Benzyl fentanyl	Benzyl replaces phenethyl
13.5.2	Benzyl fentanyl-D3	
13.5.3	cis-3-Methyl benzyl fentanyl	as above + 3-Me on piperidine ring,
13.5.4	Benzyl acryl fentanyl	as above + acryl replaces propionyl
13.5.5	Benzyl benzoyl fentanyl	as above + benzoyl replaces propionyl
13.5.6	Benzyl furanyl fentanyl	as above + furanyl replaces propionyl
13.5.7	p-Fluoro cyclopropyl benzyl fentanyl	as above + cyclopropyl replaces propionyl and F on aniline ring
13.5.8	N-(3-Ethylindole)fentanyl	Indol-3-ylethyl replaces phenethyl
13.5.9	Furanylethylfentanyl	Furanylethyl replaces phenethyl
13.5.10	Thienyl fentanyl	Thienylmethyl replaces phenethyl
13.5.11	Thienyl fentanyl-D3	
13.5.12	Thiofentanyl	Thienylethyl replaced phenethyl
13.5.13	Thiofentanyl-D3	
13.5.14	cis-3-Methylthiofentanyl	
13.5.15	trans-3-Methylthiofentanyl	
13.5.16	trans-3-Methylthiofentanyl-D3	
13.5.17	alpha-Methylthiofentanyl	
13.5.18	beta-Hydroxythiofentanyl	
13.5.19	beta-Hydroxythiofentanyl-D3	
13.5.20	beta-Hydroxythiofentanyl-D5	
13.5.21	beta-Hydroxythioacetylfentanyl	Acetyl replaces propionyl
13.6	**Substitution on propionyl group**	
13.6.1	alpha-Chlorofentanyl	Cl on C adjacent to terminal C of propionyl
13.6.2	alpha-Chlorofentanyl-D5	
13.6.3	alpha-MeO fentanyl	MeO on C adjacent to terminal C of propionyl
13.6.4	omega-Hydroxyfentanyl	OH on terminal C of propionyl
13.6.5	omega-Hydroxyfentanyl-D5	
13.6.6	omega-1-Hydroxyfentanyl	OH on C adjacent to terminal C of propionyl
13.6.7	omega-1-Hydroxyfentanyl-D5	
13.7	**Replacement of propionyl group**	
13.7.1	**Acetyl fentanyls**	
13.7.1.1	Acetyl fentanyl	
13.7.1.2	Acetyl fentanyl-D3	

Ref	Substance	Other names
13.7.1.3	Acetyl fentanyl-D5	
13.7.1.4	Acetyl fentanyl -13C6	
13.7.1.5	4'-Me Acetyl fentanyl	4-Me on phenylethyl ring
13.7.1.6	Acetyl fentanyl, 4'-Me (on phenylethyl) analogue-D5	
13.7.1.7	ortho- Me Acetyl fentanyl	2-Me on phenyl ring
13.7.1.8	meta-Me Acetyl fentanyl	
13.7.1.9	para- Me Acetyl fentanyl	
13.7.1.10	para-F Acetyl fentanyl	
13.7.1.11	para-MeO Acetyl fentanyl	
13.7.1.12	alpha-Methyl acetylfentanyl	Me on phenethyl chain
13.7.1.13	alpha-Methyl acetylfentanyl-D3	
13.7.1.14	beta-Methyl acetylfentanyl	
13.7.2	**Acrylfentanyls**	
13.7.2.1	Acrylfentanyl (Acryloyl fentanyl)	
13.7.2.2	Acrylfentany-D5	
13.7.2.3	ortho-Me acrylfentanyl	
13.7.2.4	para-Me acrylfentanyl	
13.7.2.5	para-MeO-acrylfentanyl	
13.7.2.6	ortho-Fluoro acrylfentanyl	
13.7.2.7	meta-Fluoro acrylfentanyl	
13.7.2.8	para-Fluoro acrylfentanyl	
13.7.2.9	para-Cl acrylfentanyl	
13.7.2.10	3,3-Dimethylacrylfentanyl	Senecioyl fentanyl
13.7.2.11	Acryl benzylfentanyl	(benzyl replaces phenethyl)
13.7.3	**Benzodioxole fentanyls**	
13.7.3.1	Benzodioxole fentanyl	Methylenedioxyphenyl fentanyl
13.7.3.2	Benzodioxole fentanyl-D5	
13.7.4	**Benzoyl fentanyls**	
13.7.4.1	Benzoyl fentanyl	Phenyl fentanyl
13.7.4.2	Benzoyl fentanyl-D5	
13.7.5	**Butyryl fentanyls**	
13.7.5.1	Butyryl fentanyl	
13.7.5.2	Butyryl fentanyl-D5	
13.7.5.3	α-Methyl-butyryl fentanyl	
13.7.5.4	cis-3-Methyl-butyryl fentanyl	
13.7.5.5	para-Me-butyryl fentany	
13.7.5.6	ortho-MeO-butyryl fentanyl	
13.7.5.7	para-MeO-butyryl fentanyl	
13.7.5.8	para-MeO-butyryl fentanyl-D7	
13.7.5.9	para-Chlorobutyrylfentanyl	
13.7.5.10	ortho-Fluorobutyrylfentanyl	2-FBF
13.7.5.11	meta-Fluorobutyrylfentanyl	3-FBF
13.7.5.12	para-Fluorobutyrylfentanyl	4-FBF
13.7.5.13	para-Fluorobutyrylfentanyl-D7	

Ref	Substance	Other names
13.7.5.14	2-Methylbutyryl fentanyl	2-Me on butyryl chain
13.7.6	**Isobutyryl fentanyls**	
13.7.6.1	Isobutyryl fentanyl	
13.7.6.2	Isobutyryl fentanyl-D5	
13.7.6.3	para-Chloroisobutyrylfentanyl	4-Cl-iBF
13.7.6.4	ortho-Fluoroisobutyrylfentanyl	2-F-iBF
13.7.6.5	meta-Fluoroisobutyrlylfentanyl	3-F-iBF
13.7.6.6	para-Fluoroisobutyrylfentanyl	4-F-iBF
13.7.6.7	para-Fluoroisobutyrylfentanyl-D7	
13.7.6.8	para-Methylisobutyrylfentanyl	
13.7.7	**Crotonyl fentanyls**	
13.7.7.1	Crotonyl fentanyl	
13.7.7.2	Crotonyl fentanyl-D5	
13.7.7.3	para-F-crotonyl fentanyl	
13.7.7.4	3-Me crotonyl fentanyl - see 3,3-DiMe Acryl fentanyl	
13.7.8	**Cyclobutyl fentanyls**	
13.7.8.1	Cyclobutyl fentanyl	
13.7.8.2	Cyclobutyl fentanyl-D5	
13.7.8.3	para-Chlorocyclobutyl fentanyl	
13.7.9	**Cyclopentyl fentanyls**	
13.7.9.1	Cyclopentyl fentanyl	
13.7.9.2	Cyclopentyl fentanyl-D5	
13.7.9.3	para-Me cyclopentyl fentanyl	
13.7.9.4	para-F cyclopentyl fentanyl	
13.7.9.5	para-Cl cyclopentyl fentanyl	
13.7.10	**Cyclopentenyl fentanyls**	
13.7.10.1	Cyclopentenyl fentanyl	
13.7.11	**Cyclopropyl fentanyls**	
13.7.11.1	Cyclopropyl fentanyl	
13.7.11.2	Cyclopropyl fentanyl-D5	
13.7.11.3	para-Fluoro cyclopropylfentanyl	
13.7.11.4	para-Chlorocyclopropyl fentanyl	
13.7.11.5	ortho-Me cyclopropylfentanyl	
13.7.11.6	para-Me cyclopropylfentanyl	
13.7.11.7	2,2,3,3-TetraMe Cyclopropyl fentanyl	
13.7.12	**Cyclohexylfentanyls**	
13.7.12.1	Cyclohexylfentanyl	
13.7.12.2	Cyclohexylfentanyl-D5	
13.7.13	**Ethoxyacetylfentanyls**	
13.7.13.1	Ethoxyacetylfentanyl	
13.7.14	**Ethylformate fentanyls**	
13.7.14.1	Ethylformate fentanyl	Fentanyl carbamate

Ref	Substance	Other names
13.7.15	**Furanyl fentanyls**	
13.7.15.1	Furanyl fentanyl	
13.7.15.2	Furanyl fentanyl-D5	
13.7.15.3	ortho-Me furanylfentanyl (2-Me phenyl analogue)	
13.7.15.4	meta-Me furanylfentanyl (3-Me phenyl analogue)	
13.7.15.5	para-Me furanylfentanyl (4-Me phenyl analogue)	
13.7.15.6	ortho-MeO furanylfentanyl	
13.7.15.7	ortho-F furanylfentayl (2-F phenyl analogue	
13.7.15.8	para-F furanylfentayl (4-F phenyl analogue)	
13.7.15.9	para-Cl furanylfentanyl	
13.7.15.10	ortho-iPr furanyl fentanyl	
13.7.15.11	3-Furanyl fentanyl (3-furan positional isomer)	
13.7.15.12	3-Furanyl fentanyl (3-furan positional isomer)-D5	
13.7.15.13	para-F 3-furanylfentayl (3-furan positional isomer)	
13.7.15.14	para-Cl 3-furanylfentayl (3-furan positional isomer)	
13.7.16	**Hexanoyl fentanyls**	
13.7.16.1	Hexanoyl fentanyl	
13.7.17	**Heptanoyl fentanyls**	
13.7.17.1	Heptanoyl fentanyl	
13.7.18	**Methacrylfentanyls**	
13.7.18.1	Methacrylfentanyl	
13.7.19	**Methoxyacetylfentanyls**	
13.7.18.1	Methoxyacetylfentanyl	
13.7.18.2	Methoxyacetylfentanyl-D5	
13.7.18.3	ortho-Me-methoxyacetylfentanyl	Me on phenyl ring
13.7.18.4	meta-Me-methoxyacetylfentanyl	
13.7.18.5	para-Me-methoxyacetylfentanyl	
13.7.18.6	ortho-Fluoro-methoxyacetyl fentanyl	Ocfentanil
13.7.18.7	ortho-Fluoro-methoxyacetyl fentanyl-D3	
13.7.18.8	ortho-Fluoro-methoxyacetyl fentanyl-D5	
13.7.18.9	meta-Fluoromethoxyacetylfentanyl	
13.7.18.10	para-Fluoromethoxyacetylfentanyl	
13.7.18.11	para-Chloromethoxyacetylfentanyl	
13.7.20	**Ocfentanil** : see ortho-Fluoro-**methoxyacetyl fentanyl**	
13.7.21	**Phenyl fentanyls**	
13.7.21.1	Phenyl fentanyl	(Benzoyl replaces propionyl)
13.7.21.2	Phenyl fentanyl-D5	
13.7.21.3	ortho-Me phenyl fentanyl	Me on phenyl ring (not benzoyl)
13.7.22	**Phenylacetyl fentanyls**	
13.7.22.1	Phenylacetyl fentanyl	
13.7.23	**Phenoxyacetyl fentanyls**	
13.7.23.1	Phenoxyacetyl fentanyl	

Ref	Substance	Other names
13.7.24	**Phenylpropionyl fentanyls**	
13.7.24.1	3-Phenylpropionyl fentanyl	β'-phenyl fentanyl
13.7.25	**Pivaloyl fentanyls**	
13.7.25.1	Pivaloyl fentanyl	(2,2-DiMe propionyl)
13.7.26	**Pyruvyl fentanyls**	
13.7.26.1	Pyruvyl fentanyl	
13.7.26.2	Pyruvyl fentanyl-D5	
13.7.27	**Senecioyl fentanyls - see Dimethylacrylfentanyl**	
13.7.28	**Tetrahydrofuranyl fentanyls**	
13.7.28.1	Tetrahydrofuran fentanyl	
13.7.28.2	Tetrahydrofuran fentanyl-D5	
13.7.28.3	3-Tetrahydrofuran fentanyl (3-furan positional isomer)	
13.7.28.4	para-Fluoro tetrahydrofuran fentanyl	
13.7.28.5	para-Me tetrahydrofyranyl fentanyl	
13.7.28.6	para-MeO tetrahydrofyranyl fentanyl	
13.7.29	**Tetramethylcyclopropyl fentanyls**	
13.7.29.1	2,2,3,3-TetraMe Cyclopropyl fentanyl	
13.7.29.2	2,2,3,3-TetraMe Cyclopropyl fentanyl-D5	
13.7.30	**Thiophene fentanyls**	
13.7.30.1	Thiophene fentanyl	
13.7.30.2	Thiophene fentanyl-D5	
13.7.31	**Valerylfentanyls**	
13.7.31.1	Valerylfentanyl	
13.7.31.2	Valerylfentanyl-D5	
13.7.31.3	Valerylfentanyl-D9	
13.7.31.4	para-Fluoro valerylfentanyl	4-F on phenyl ring
13.7.31.5	para-Chloro valerylfentanyl	
13.7.31.6	para-MeO valerylfentanyl	
13.7.32	**Isovalerylfentanyls**	
13.7.32.1	Isovalerylfentanyl	

14.0 Mixed fentanyl standards

14.1.1	6 Fentanyls + U47700	F+ Acetyl, Acryl, Butyl, Cyclopropyl & Furanyl
14.1.2	6 Fentanyls + U48800 and U49900	FiB, o-F, 3-Me, MeOacetyl, cyclopentyl, THF
14.1.3	7 Fentanyls, each @ 100 ug/ml	F+ Acetyl, Acryl, Butyrl ,4-CliBF, Furanyl & OcF
14.1.4	13 fentanyls + W15 & W18, each @ 100ug/ml	

15.0 Norfentanyl metabolites (loss of phenethyl chain, or equivalent)

15.1.1	Acetyl norfentanyl	
15.1.2	Acetyl norfentanyl-D5	
15.1.3	Acetyl norfentanyl-13C6	

Ref	Substance	Other names
15.1.4	Butyryl norfentanyl	
15.1.5	Isobutyryl norfentanyl	
15.1.6	Cyclopropyl norfentanyl	
15.1.7	N-Me cyclopropyl norfentanyl	
15.1.8	Furanyl norfentanyl	
15.1.9	omega-1-Hydroxynorfentanyl	
15.1.10	omega-1-Hydroxynorfentanyl-D5	
15.1.11	Methoxyacetylnorfentanyl	
15.1.12	cis-3-Methylnorfentanyl	
15.1.13	trans-3-Methylnorfentanyl	
15.1.14	Norcarfentanil	
15.1.15	N-Me-Norcarfentanil	
15.1.16	Noralfentanil	
15.1.17	Norfentanyl	
15.1.18	Norfentanyl-D3	
15.1.19	Norfentanyl-D5	
15.1.20	N-Me-norfentanyl	
15.1.21	Norlofentanil	
15.1.22	Norlofentanil-D3	
15.1.23	Normethylfentanyl	
15.1.24	Normethylfentanyl-D3	
15.1.25	N-Me-Norremifentanil	
15.1.26	Norsulfentanil	
15.1.27	Norsulfentanil-D3	

16.0	Other metabolites	
16.1.1	Butyryl fentanyl carboxy metabolite	
16.1.2	Despropionyl-2'F-ortho-F fentanyl	
16.1.3	Remifentanil acid	
16.1.4	Valeryl fentanyl carboxy metabolite	

17.0	Other Synthetic opioids	
17.1.1	N-[(1-dimethylamino)cyclohexylmethyl] benzamide	AH-7563
17.1.2	3,4-DiCl-N-[(1-dimethylamino)cyclohexylmethyl] benzamide	AH 7921
17.1.3	AH-7921-D3	
17.1.4	AH-7921-D6	
17.1.5	3,4-DiCl-N-[(1-methylamino)cyclohexylmethyl] benzamide	N-Desmethyl AH-7921
17.1.6	3,4-DiCl-N-[(1-amino)cyclohexylmethyl] benzamide	N,N-Didesmethyl AH-7921
17.1.7	3,4-DiCl-N-[(1-piperidinyl)cyclohexylmethyl] benzamide	AH-7959
17.1.8	3,4-DiCl-N-[(1-(4-Me-1-piperazinyl)cyclohexylmethyl] benzamide	AH-8507
17.1.9	4-Cl-N-[(1-dimethylamino)cyclohexylmethyl] benzamide	AH 8529
17.1.10	3-Cl-N-[(1-dimethylamino)cyclohexylmethyl] benzamide	AH 8532
17.1.11	2-Cl-N-[(1-dimethylamino)cyclohexylmethyl] benzamide	AH 8533

Ref	Substance	Other names
17.1.12	1-Cyclohexyl-4-(1,2-diphenylethyl)piperazine	MT-45, IC6
17.1.13	1-Cyclohexyl-4-(1,2-diphenylethyl)piperazine-D11	
17.1.14	(S) -(+)-1-Cyclohexyl-4-(1,2-diphenylethyl)piperazine	S-(+)-MT-45
17.1.15	(R) -(-)-1-Cyclohexyl-4-(1,2-diphenylethyl)piperazine	R-(-)-MT45
17.1.16	1-Cyclohexyl-4-(1,2-diphenylethyl)piperazine-D11	
17.1.17	2F-MT-45	F on phenyl ring
17.1.18	3F-MT-45	F on phenyl ring
17.1.19	4F-MT-45	F on phenyl ring
17.1.20	4-Cl-N-[1-(2-phenylethyl)-2-piperidinylidene] benzene sulphonide	W-15
17.1.21	4-Cl-N-[1-(2-phenylethyl)-2-piperidinylidene] benzene sulphonide-D4	
17.1.22	4-Cl-N-[1-(2-(4-nitrophenyl)ethyl)-2-piperidinylidene] benzene sulphonide	W-18
17.1.23	4-Cl-N-[1-(2-(4-nitrophenyl)ethyl)-2-piperidinylidene] benzene sulphonide-D4	
17.1.24	4-Cl-N-[2-piperidinylidene] benzene sulphonide	Nor W-15, Nor-W-18, Nor-W-19
17.1.25	4-Cl-N-[2-piperidinylidene] benzene sulphonide-D4	
17.1.26	N-(1-(4-Aminophenyl)piperidin-2-ylidene 4-Cl-benzene sulphonamide	W-19
17.1.27	N-(1-(4-Aminophenyl)piperidin-2-ylidene 4-Cl-benzene sulphonamide-D4	
17.1.28	N-(1-(4-Aminophenyl)piperidin-2-ylidene benzene sulphonamide	Deschloro W-19
17.1.29	N-(1-(4-(N-Acetyl)aminophenyl)piperidin-2-ylidene benzene sulphonamide	N-Acetyl W-19
17.1.30	Tapentadol	
17.1.31	Tapentadol-D3	
17.1.32	Tapentadol-D5	
17.1.33	N-Desmethyl tapentadol	
17.1.34	N-(2-Dimethylaminocyclohexyl)-3,4-dichloro-N-Me-benzamide	U-47700
17.1.35	U-47700-D6	
17.1.36	N-(2-Methylaminocyclohexyl)-3,4-dichloro-N-Me-benzamide	N-Desmethyl-U-47700
17.1.37	N-(2-Methylaminocyclohexyl)-3,4-dichloro-N-Me-benzamide -D3	
17.1.38	N-(2-Aminocyclohexyl)-3,4-dichloro-N-Me-benzamide	N,N-Didesmethyl-U-47700
17.1.39	N-(2-Methylaminocyclohexyl)-3,4-methylenedioxy-N-Me-benzamide	3,4-Methylenedioxy U-47700
17.1.40	N-(2-Methylaminocyclohexyl)-3,4-ethylenedioxy-N-Me-benzamide	3,4-Ethylenedioxy U-47700
17.1.41	N-(2-Dimethylaminocyclohexyl)-3,4-dichloro-N-Pr-benzamide	Propyl U-47700
17.1.42	N-(2-Dimethylaminocyclohexyl)-3,4-dichloro-N-iPr-benzamide	isoPropyl U-47700
17.1.43	4-Br-N-((2-dimethylamino)cyclohexyl)-benzamide	Bromadoline, U-47931E
17.1.44	4-Br-N-((2-dimethylamino)cyclohexyl)-N-Me-benzamide	N-Me-U-47931E
17.1.45	2-(2,4-Dichlorophenyl)-N-(2-dimethylamino)cyclohexyl-N-methylacetamide	U-48800
17.1.46	N-(2-Diethylaminocyclohexyl)-3,4-dichloro-N-Me-benzamide	U49900 (N,N-Di-ethyl analogue of U-47700)
17.1.47	N-(2-(1-Pyrrolodinyl)cyclohexyl)-3,4-dichloro-N-Me-benzeneacetamide	U-50488

Ref	Substance	Other names
17.1.48	N-(2-Dimethylaminocyclohexyl)-3,4-dichloro-N-Me-benzene-acetamide	U-51754
17.1.49	N-(2-Dimethylaminocyclohexyl)-2-biphenyl-N-methylaceta-mide	4-Phenyl U-51754
17.1.50	N-(2-Dimethylaminocyclohexyl)-2-(3,4-ethlenedioxyphe-nyl)-N-Me-benzeneacetamide	3,4-Ethylenedioxy U-51754
17.1.51		U-62066, Spiradoline
17.1.52	4-(4-Br-phenyl)-4-(dimethylamino)-1-(2-phenethyl)cyclohex-anol	Bromadol
17.1.53	Herkinorin	Salvinorin A analogue; μ-opioid agonist

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