

# List of designer drugs

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Designer drugs are structural or functional analogues of controlled substances that are designed to mimic the pharmacological effects of the parent drug while avoiding detection or classification as illegal. Some designer drugs (research chemicals) are structural analogues of psychoactive tryptamines or phenethylamines but there are many other chemically unrelated psychoactive substances that can be considered part of the designer drug group.<sup>[1][2][3][4]</sup> Designer drugs also include analogues of controlled anabolic steroids. The pharmaceutical activities of these compounds might not be predictable based strictly upon structural examination. Many of the substances have common effects while structurally different or different effects while structurally similar due to SAR paradox. As a result of no real official naming for some of these compounds, as well as regional naming, this can all lead to potentially hazardous mix ups for users.<sup>[5]</sup> The following list is not exhaustive.

## Psychedelics

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A psychedelic substance is a psychoactive drug whose primary action is to alter cognition and perception. Psychedelics tend to affect and explore the mind in ways that result in the experience being qualitatively different from those of ordinary consciousness. The psychedelic experience is often compared to non-ordinary forms of consciousness such as trance, meditation, yoga, religious ecstasy, dreaming and even near-death experiences.

### Lysergamides

Lysergamides are amide derivatives of the alkaloid lysergic acid.

- 1B-LSD, 1-Butanoyl-LSD<sup>[6][7][8]</sup>
- 1cP-LSD, 1-Cyclopropionyl-LSD<sup>[9][10]</sup>
- 1P-ETH-LAD, 1-Propionyl-ETH-LAD
- 1P-LSD, 1-Propionyl-LSD
- ALD-52, 1-Acetyl-LSD
- AL-LAD, 6-Allyl-6-Nor-LSD
- ETH-LAD, 6-Ethyl-6-Nor-LSD
- LSM-775, N-Morpholinyllysergamide
- LSZ, LA-SS-Az
- MiPLA, Methylisopropyllysergamide

### Tryptamines

Drugs containing the tryptamine moiety are typically substrates for the serotonin receptors, in keeping with their close structural resemblance to serotonin, a neurotransmitter.

- 4-AcO-DALT, Dalcetin
- 4-AcO-DET, Ethacetin
- 4-AcO-DiPT, Ipracetin
- 4-AcO-DMT, Psilacetin
- 4-AcO-DPT, Depracetin<sup>[11]</sup>

- 4-AcO-EiPT, Ethipracetin
- 4-AcO-MET, Metacetin
- 4-AcO-MiPT, Mipracetin
- 4-HO-DALT, Dalocin<sup>[12]</sup>
- 4-HO-DET, Ethocin
- 4-HO-DiPT, Iprocin
- 4-HO-DPT, Deprocin
- 4-HO-MET, Metocin
- 4-HO-MiPT, Miprocin
- 4-HO-MPMI, Lucigenol
- 4-HO-McPT
- 4-HO-MPT, Meprocin
- 4-HO-EPT
- 4-MeO-MiPT
- 5-Bromo-DMT
- 5-MeO-DALT
- 5-MeO-DET
- 5-MeO-DiPT, Foxy Methoxy
- 5-MeO-DMT
- 5-MeO-DPT
- 5-MeO-EiPT
- 5-MeO-EPT<sup>[13]</sup>
- 5-MeO-MALT
- 5-MeO-MET<sup>[14]</sup>
- 5-MeO-MiPT, Moxy Methoxy
- 5-MeO-MPMI
- 5-MeO-NiPT<sup>[15]</sup>
- 5-MeO-TMT, Indapex
- DALT, Diallyltryptamine
- DET, Diethyltryptamine
- DiPT, Diisopropyltryptamine
- DPT, Dipropyltryptamine
- 4-PO-DET, Ethocybin, CEY-19
- EiPT, Ethylisopropyltryptamine
- EPT, Ethylpropyltryptamine
- MiPT, Methylisopropyltryptamine
- McPT, Methylcyclopropyltryptamine<sup>[16]</sup>
- EcPT
- PcPT
- MET, Methylethyltryptamine

## Benzofurans

- 5-MeO-DiBF
- Dimemebfe, aka 5-MeO-Benzofuranethanamine, 5-MeO-BFE

## Phenethylamines

Drugs containing the phenethylamine moiety bear close structural resemblance to dopamine but substitution on the benzene ring gives rise to drugs with a much higher affinity for serotonin receptors.

- 3C-E
- 3C-P
- Allylescaline, "AL"
- Escaline, "E"
- Isoproscaline, "IP"
- Methallylescaline, "MAL"
- Proscaline, "P"

## 2C-x

2C-x class of psychedelics are 2,5-dimethoxy-phenethylamine derivatives.

- 2C-B
- 2C-B-AN, Brolophetaminil<sup>[17]</sup>
- 2C-B-FLY
- 2C-C
- 2C-D, 2C-M
- 2C-E, "Europa"
- 2C-G
- 2C-iP, "Jelena"
- 2C-I
- 2C-P
- 2C-T-2
- 2C-T-4
- 2C-T-7
- 2C-T-21
- βk-2C-B
- BOB, β-Methoxy-2C-B
- BOD, β-Methoxy-2C-D
- BOHB, β-Hydroxy-2C-B, "βOH-2CB"
- HOT-7

## NBxx

- 2CFCB-NBOMe
- 25B-NBF<sup>[18]</sup>
- 25B-NBOH
- 25B-NBOMe, "Nova", Cimbi-36
- 25C-NBF<sup>[19]</sup>
- 25C-NBOH
- 25C-NBOMe, "Pandora", Cimbi-82
- 25D-NBOMe, "Divination"

- 25E-NBOMe
- 25I-NBF, Cimbi-21
- 25I-NBMD, Cimbi-29
- 25I-NBOH, Cimbi-27
- 25I-NBOMe, Cimbi-5, "Solaris", "N-Bomb"
- 25iP-NBOMe<sup>[20]</sup>
- 25H-NBOMe<sup>[21]</sup>
- 25N-NBOMe
- 25P-NBOMe
- Mescaline-NBOMe<sup>[22]</sup>

## DOx

The DOx family of psychedelics are also known as "substituted amphetamines" as they contain the amphetamine backbone but are substituted on the benzene ring. This gives rise to serotonin agonists similar to the 2C-X class but more resistant to elimination in the body.

- Aleph
- Bromo-DragonFLY, DOB-DragonFLY
- DOB
- DOC
- DOE, DOET, "Hecate"
- DOI
- DOiPR, DOiP
- DOM, "STP"
- DON
- DOPR
- TMA-2
- TMA-6
- ZDCM-04, 7-{2-[2-(4-Chloro-2,5-dimethoxy-phenyl)-1-methyl-ethylamino]-ethyl}-1,3-dimethyl-3,4,5,7-tetrahydro-purine-2,6-dione

## Dissociatives

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Dissociatives are a class of hallucinogens which distort perceptions of sight and sound and produce feelings of detachment - dissociation - from the environment and self. This is done through reducing or blocking signals to the conscious mind from other parts of the brain. Although many kinds of drugs are capable of such action, dissociatives are unique in that they do so in such a way that they produce hallucinogenic effects, which may include sensory deprivation, dissociation, hallucinations, and dream-like states or trances. Some, which are nonselective in action and affect the dopamine and/or opioid systems, may be capable of inducing euphoria. Many dissociatives have general depressant effects and can produce sedation, respiratory depression, analgesia, anesthesia, and ataxia, as well as cognitive and memory impairment and amnesia.

## Arylcyclohexylamines

Arylcyclohexylamines are the oldest and most widely used dissociatives. The class includes the well known anaesthetic, ketamine.

- 2-Fluorodeschloroketamine, 2-FDCK, Fluoroketamine, 2-Fluoroketamine
- 2'-Oxo-PCE, Eticyclidinone, O-PCE, Deschloroethylnorketamine, 2-DCNEK
- 2-Trifluoromethyldeschloroketamine, 2-TFMDCK
- 3-HO-PCE, Hydroxyeticyclidine<sup>[23]</sup>
- 3-HO-PCP, Hydroxyphencyclidine
- 3-MeO-PCE, Methoxyeticyclidine
- 3-MeO-PCM
- 3-MeO-PCP
- 4-MeO-PCP, Methoxydine
- Deschloroketamine, 2'-Oxo-PCM, 2-DCK, DCK, O-PCM
- Eticyclidine, PCE, CI-400
- Methoxetamine, MXE, 3-MeO-2'-Oxo-PCE
- Methoxmetamine, MXM, MMXE, 3-MeO-2'-Oxo-PCM, E-MXE
- Methoxpropamine, MXPr, 3-MeO-2'-Oxo-PCPr
- Methoxyketamine, 2-MeO-2-Deschloroketamine, 2-MeO-Ketamine
- N-Ethylnorketamine, NENK, N-Ethylketamine

## **Diarylethylamines**

Diarylethylamines began to appear on grey markets only as recently as 2013.

- 2-Chloro-Ephenidine
- 2-MeO-Ephenidine
- Diphenidine
- Ephenidine, NEDPA, EPE
- Fluorolintane
- Methoxphenidine, 2-MeO-Diphenidine, MXP
- N-Methylephenidine, "Ephenidine-2"

## **Misc**

- Dizocilpine, MK-801
- Glaucine
- PD-137889 (P-89)

## **Piperazines**

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Piperazine containing designer drugs have effects similar to MDMA (ecstasy). This class of drugs are mimics of serotonin that activate 5-HT receptor subtypes that release norepinephrine and dopamine.

- 2C-B-BZP
- 3-Chlorophenylpiperazine, meta-Chlorophenylpiperazine, mCPP
- 4-Fluorophenylpiperazine, para-Fluorophenylpiperazine, pFPP, 4-FPP, Fluoperazine, Flipiperazine
- 4-Methoxyphenylpiperazine, para-Methoxyphenylpiperazine, MeOPP, pMPP, 4-MPP, Paraperazine
- Benzylpiperazine, BZP
- Dibenzylpiperazine, DBZP

- Difluoromethylenedioxybenzylpiperazine, DF-MDBP, DB-MDBP<sup>[24]</sup>
- Methoxypiperamide, MEOP, MEXP
- Methylbenzylpiperazine, MBZP
- Methylenedioxybenzylpiperazine, MDBZP, Piperonylpiperazine
- Trifluoromethylphenylpiperazine, TFMPP

## **Empathogens**

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Empathogens are a class of psychoactive drugs that produce distinctive emotional and social effects similar to those of MDMA . Users of empathogens say the drugs often produce feelings of empathy, love, and emotional closeness to others.

### **MDxx**

Substituted methylenedioxymethylethyamines (MDxx) are a large chemical class of derivatives of the phenethylamines, which includes many psychoactive drugs that act as entactogens, psychedelics, and/or stimulants, as well as entheogens.

- 5-Methoxymethylene, βk-MMDMA, "2-A1MP"
- 5-Methylethylone, 5-Me-βk-MDEA, 5-ME
- 5-Methyl-MDA
- Butylone, βk-MBDB
- Dibutylone, βk-DMBDB
- Difluoromethylenedioxymphetamine, DiFMDA
- Dimethylone, βk-MDDMA, "M11"<sup>[25]</sup>
- Dipentylone, βk-DMBDP<sup>[26]</sup>
- EBDB, Ethylbenzodioxolylbutanamine
- EDMA, Ethylenedioxymethylamphetamine
- EFLEA, N-Hydroxy-EDMA<sup>[27][28]</sup>
- Ethylone, βk-MDEA
- Eutylone, βk-EBDB, N-Ethyl-Butylone
- FLEA, Methylenedioxymethamphetamine, MDHMA
- MBDP, Methylbenzodioxylpentanamine
- MBDB, Methylbenzodioxylbutanamine, "Eden"
- MDEA, Methylenedioxymethylamphetamine, MDE, "Eve"
- Methylenedioxymethamphetamine, MDOH
- Methylenedioxymethamphetamine, N-Tert-Butyl-Methylenone
- Methylone, βk-MDMA
- MMDA, 5-MeO-MDA
- MMDA-2, 6-MeO-MDA
- Pentylone, βk-MBDP
- Putylone, βk-PDBD, N-Propylbutylone

### **Benzofurans**

Benzofurans are similar in structure to MD(M)A but differ in that the methylenedioxy groups have been modified, removing one of the two oxygens in the methylenedioxy ring to render a benzofuran ring.

- 5-APB
- 5-EAPP
- 5-MAPB
- 5-APDB
- 5-MAPDB
- 5-MBPB<sup>[29]</sup>
- 6-APB, "Benzo Fury"
- 6-EAPP
- 6-MAPB
- 6-APDB
- 6-MAPDB

## Miscellaneous polycyclic phenethylamines

Indane and tetralin-type phenethylamines are vaguely related to their amphetamine analogues.

- MDMAI
- 5-APDI, Indanylaminopropane, IAP
- MDAI
- MEAI, "Chaperon"
- NM-2-AI

Only one non-tryptamine indole has been sold, 5-IT. It shows strong MAOI activity.

- 5-IT, 5-API, PAL-571

## Tryptamines

Drugs containing the tryptamine moiety are typically substrates for the serotonin receptors, in keeping with their close structural resemblance to serotonin, a neurotransmitter.

- αET, α-Ethyltryptamine, "Monase"
- 5-MeO-αET, α,O-Diethylserotonin
- αMT, α-Methyltryptamine, "Indopan"
- 5-MeO-αMT, α,O-Dimethylserotonin

## Amphetamines

Substituted amphetamines are a chemical class of stimulants, entactogens, hallucinogens, and other drugs. They feature a phenethylamine core with a methyl group attached to the alpha carbon resulting in amphetamine, along with additional substitutions.

- 4-BA, 4-Bromoamphetamine, PBA
- 4-CA, 4-Chloroamphetamine, PCA
- 4-CMA, 4-Chloromethamphetamine, PCMA

- 4-FA, 4-Fluoroamphetamine, PFA
- 4-FMA, 4-Fluoromethamphetamine, PFMA
- 4-MA, 4-Methylamphetamine, PAL-313
- 4-MeOA, 4-Methoxyamphetamine, PMA, 4-MeO-A, "Death"
- 4-MeOMA, 4-Methoxymethamphetamine, PMMA, 4-MeO-MA
- 4-MTA, 4-Methylthioamphetamine
- Methamnetamine, N-Methyl-PAL-287, Methylnaphetamine, MNT, MNA
- MMA, 3-Methoxy-4-Methylamphetamine
- 3-FEA, 3F-Ethamphetamine, 3-Fluoroethamphetamine

## Stimulants

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Stimulants produce a variety of different kinds of effects by enhancing the activity of the central and peripheral nervous systems. Common effects, which vary depending on the substance and dosage in question, may include enhanced alertness, awareness, wakefulness, endurance, productivity, and motivation, increased arousal, locomotion, heart rate, and blood pressure, and the perception of a diminished requirement for food and sleep.

### Amphetamines

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- 2-FA, 2-Fluoroamphetamine
- 2-FMA, 2-Fluoromethamphetamine
- 2-MA, 2-Methylamphetamine, Oracetamine
- 3-FA, 3-Fluoroamphetamine
- 3-FMA, 3-Fluoromethamphetamine
- 3-Methylamphetamine, 3-MA, meta-Methamphetamine
- $\beta$ -Phenylmethamphetamine
- N,alpha-Diethylphenylethylamine, EAPB

### Cathinones

Cathinones include some stimulants and entactogens, which are derivatives of cathinone. They feature a phenethylamine core with an alkyl group attached to the alpha carbon, and a ketone group attached to the beta carbon, along with additional substitutions.

- 2-Chloromethcathinone, 2-CMC
- 2-Fluoromethcathinone, 2-FMC<sup>[30]</sup>
- 2-Methylethcathinone, 2-MEC<sup>[31]</sup>
- 2-Methylmethcathinone, 2-MMC<sup>[32]</sup>
- 2,4-Dimethylethcathinone, 2,4-DMEC<sup>[33]</sup>
- 2,4-Dimethylmethcathinone, 2-Methylmephedrone, 2,4-DMMC<sup>[34]</sup>
- 3,4-Dimethylmethcathinone, 3,4-DMMC
- 3,4-Dimethyl-N-ethylbuphedrone, 3,4-DMNEB<sup>[21]</sup>
- 3,4-Dimethyl-N-ethylpentadrone, 3,4-DMNPD<sup>[21]</sup>

- 3-Chloromethcathinone, 3-CMC, Metaclephedrone, Clophedrone<sup>[35]</sup>
- 3-Ethylethcathinone, 3-EEC<sup>[36]</sup>
- 3-Fluoromethcathinone, 3-FMC
- 3-Fluoro-4-methylmethcathinone, 3-Fluoromephedrone
- 3-Methoxymethcathinone, 3-MeOMC<sup>[37]</sup>
- 3-Methylethcathinone, 3-MEC<sup>[38]</sup>
- 3-Methylmethcathinone, 3-MMC
- 4-Bromomethcathinone, 4-BMC, Brephedrone
- 4-Bromoethcathinone, 4-BEC<sup>[39]</sup>
- 4-Chlorobutylcathinone, 4-CBC
- 4-Chlorodimethylcathinone, 4-CDMC
- 4-Chloroethcathinone, 4-CEC<sup>[40]</sup>
- 4-Chloroisopropylcathinone, 4-CiPC
- 4-Chloromethcathinone, 4-CMC, Clephedrone<sup>[41]</sup>
- 4-Ethylethcathinone, 4-EEC
- 4-Ethylmethcathinone, 4-EMC
- 4-Fluoroethcathinone, 4-FEC
- 4-Fluoromethcathinone, Flephedrone, 4-FMC
- 4-Fluoro-NiPP, 4F-IVP, 4-Fluoro-N-Isopropylpentedrone, 4-Fluoro- $\alpha$ -Isopropylamino-Valerophenone, 4-Fluoro-iPAVP, 4-Fluoro-NPP<sup>[42]</sup>
- 4-Fluorpentedrone, 4-FPD<sup>[43]</sup>
- 4-Methyl- $\alpha$ -Ethylaminopentiophenone, 4-MEAPP, N-Ethyl-4-Methylpentedrone<sup>[44]</sup>
- 4-Methylbuphedrone, 4-MeMABP, BZ-6378
- 4-Methylcathinone, 4-MC, Normephedrone
- 4-Methyldimethylcathinone, 4-MDMC<sup>[45]</sup>
- 4-Methylethcathinone, 4-MEC
- 4-Methylpentedrone, 4-MPD
- 4-Methylpropylcathinone, 4-MPC
- Benzedrone, 4-MBC
- Buphedrone,  $\alpha$ -Methylamino-Butyrophenone, MABP
- DL-4662, Dimethoxyethylpentedrone, VEVP<sup>[46]</sup>
- Ephylone, N-Ethylpentylone,  $\beta$ k-Ethyl-K,  $\beta$ k-EBDP
- Ethcathinone, EC
- Hexedrone,  $\alpha$ -Methylamino-Caprophenone
- 4-Methylmethcathinone, Mephedrone, 4-MMC, 4-Methylephedrone, "MCAT"
- 4-Methoxymethcathinone, Methedrone,  $\beta$ k-PMMA, 4-Methoxyephedrone, 4-MeoMC
- Mixedrone
- N,N-Diethyl-4-Methcathinone, N,N-DEMC
- N-Ethylbuphedrone, NEB
- N-Ethylhexedrone, NEH, "Hexen"
- N-Ethylpentedrone, NEP
- 4-Fluoro-N-Ethylbuphedrone, 4-Fluoro-NEB, 4-FNEB
- NiPH, N-Isopropylhexedrone
- NiPP,  $\alpha$ -Isopropylamino-Valerophenone, iPAVP, N-Isopropylpentedrone, NPP<sup>[47]</sup>
- Pentedrone,  $\alpha$ -Methylamino-Valerophenone, MAVP, PD
- $\alpha$ -Ethylaminopentiophenone, EAPP, N-Ethylpentedrone<sup>[44]</sup>

- $\beta$ k-IBP, Indanyl-N-ethylbuphedrone<sup>[21]</sup>
- $\beta$ k-IVP, Indanyl-N-ethylpentadrone<sup>[21][48]</sup>

## Pyrrolidines and Pyrrolidinophenones

Pyrrolidines are amphetamines with a pyrrolidine group. Pyrrolidinophenones (also called Pyrovalerones) are cathinones ( $\beta$ k-amphetamines) with a pyrrolidine group.

- Diphenylprolinol, D2PM
- 2-Diphenylmethylpyrrolidine, Desoxy-D2PM
- $\alpha$ -Pyrrolidinopropiophenone,  $\alpha$ -PPP
- 2',4'-Dimethyl- $\alpha$ -pyrrolidinopropiophenone, DMPPP, 2,4-DM- $\alpha$ -PPP
- 3',4'-Methylenedioxy- $\alpha$ -pyrrolidinopropiophenone, MDPPP, 3,4-MD- $\alpha$ -PPP
- 4'-Chloro- $\alpha$ -pyrrolidinopropiophenone, 4-Chloro- $\alpha$ -PPP
- 4'-Methoxy- $\alpha$ -pyrrolidinopropiophenone, MOPPP, 4-MeO- $\alpha$ -PPP
- 4'-Methyl- $\alpha$ -pyrrolidinopropiophenone, 4-MePPP, MPPP, MaPPP
- $\alpha$ -Pyrrolidinobutiophenone,  $\alpha$ -PBP
- 3',4'-Methylenedioxy- $\alpha$ -pyrrolidinobutiophenone, MDPBP, 3,4-MD- $\alpha$ -PBP
- 4'-Fluoro- $\alpha$ -pyrrolidinobutyrophenone, 4-Fluoro- $\alpha$ -PBP<sup>[49]</sup>
- 4-Methoxy- $\alpha$ -pyrrolidinobutyrophenone, 4-MeO- $\alpha$ -PBP<sup>[50]</sup>
- 4'-Methyl- $\alpha$ -pyrrolidinobutiophenone, MPBP, 4-Me- $\alpha$ -PBP
- 5-PPDI, Indanyl- $\alpha$ -PBP<sup>[51]</sup>
- TH-PBP, Cyclohexane- $\alpha$ -PBP
- $\alpha$ -Pyrrolidinobutiothiophenone,  $\alpha$ -PBT<sup>[52]</sup>
- $\alpha$ -PCYP
- $\alpha$ -Pyrrolidinopentiophenone,  $\alpha$ -PVP,  $\beta$ k-Prolintane, O-2387
- 3',4'-Dimethoxy- $\alpha$ -pyrrolidinopentiophenone, 3,4-DMPV
- 3',4'-Dimethyl- $\alpha$ -pyrrolidinopentiophenone, 3,4-DMPV<sup>[21]</sup>
- 4'-Bromo- $\alpha$ -pyrrolidinopentiophenone, 4-Bromo- $\alpha$ -PVP
- 4'-Chloro- $\alpha$ -pyrrolidinopentiophenone, 4-Chloro- $\alpha$ -PVP
- 4'-Fluoro- $\alpha$ -pyrrolidinopentiophenone, 4-Fluoro-PVP, 4-Fluoro- $\alpha$ -PVP
- 4'-Methoxy- $\alpha$ -pyrrolidinopentiophenone, 4-MeO- $\alpha$ -PVP, 4-MeO-PVP, MOPVP
- 5-DBFPV, 5-Dihydrobenzofuranpyrovalerone, 3-Desoxy-MDPV
- Pyrovalerone, 4-Me- $\alpha$ -PVP, Centroton, Thymergix, O-2371
- Methylenedioxypyrovalerone, MDPV
- Naphyrone, Naphthylpyrovalerone, O-2482
- Pyrophenidone,  $\alpha$ -Phenyl-Pyrovalerone
- Indapyrophenidone, Indanyl- $\alpha$ -Phenyl- $\alpha$ -PVP
- TH-PVP, Cyclohexane- $\alpha$ -PVP<sup>[53]</sup>
- $\alpha$ -Pyrrolidinopentiothiophenone,  $\alpha$ -PVT
- $\alpha$ -Pyrrolidinoisohexaphenone,  $\alpha$ -PiHP
- $\alpha$ -Pyrrolidinohexiophenone,  $\alpha$ -PHP, PV-7
- 3',4'-Dimethoxy- $\alpha$ -PHP, 3,4-DMPHP<sup>[28]</sup>
- 4'-Fluoro- $\alpha$ -pyrrolidinohexiophenone, 4-Fluoro- $\alpha$ -PHP
- 4'-Methyl- $\alpha$ -pyrrolidinohexiophenone, MPHP, 4-Me- $\alpha$ -PHP, PV-4
- 4'-Methoxy- $\alpha$ -pyrrolidinohexiophenone, 4-MeO- $\alpha$ -PHP
- TH-PHP, Cyclohexane- $\alpha$ -PHP

- 5-BPDI, Indanyl- $\alpha$ -PHP<sup>[54]</sup>
- Methylenedioxypyrrolidinohexiophenone, MDPHP<sup>[21][55]</sup>
- $\alpha$ -Pyrrolidinoheptiophenone, PV-8,  $\alpha$ -PHPP<sup>[56]</sup>
- 4'-Fluoro- $\alpha$ -pyrrolidinoheptiophenone, 4-Fluoro-PV-8, 4-Fluoro- $\alpha$ -PHPP<sup>[44]</sup>
- 4'-Methoxy- $\alpha$ -pyrrolidinoheptiophenone, 4-MeO-PV-8, 4-MeO- $\alpha$ -PHPP
- $\alpha$ -Pyrrolidinoctanophenone, PV-9,  $\alpha$ -POP<sup>[44]</sup>
- 4'-Fluoro- $\alpha$ -pyrrolidinoctanophenone, 4-Fluoro-PV-9, 4-Fluoro- $\alpha$ -POP
- 4'-Methoxy- $\alpha$ -pyrrolidinoctanophenone, 4-MeO-PV-9, 4-MeO- $\alpha$ -POP<sup>[57]</sup>
- $\alpha$ -Pyrrolidinonanonanophenone, PV-10,  $\alpha$ -PNP<sup>[58]</sup>

## Thiophenes

Thiophenes are stimulant drugs which are analogues of amphetamine or cathinone where the phenyl ring has been replaced by thiophene.

- Thiopropamine
- Methiopropamine, MPA
- Thiothinone,  $\beta$ k-MPA

## Tropanes and Piperidines

Tropane alkaloids occur in plants of the families erythroxylaceae (including coca). Piperidine and its derivatives are ubiquitous building blocks in the synthesis of many pharmaceuticals and fine chemicals.

- 2-Diphenylmethylpyrrolidine, Desoxy-D2PM, 2-Benzhydrylpyrrolidine
- 3,4-Dichloromethylphenidate, 3,4-CTMP
- 4'-Fluorococaine, 4'-FC
- 4-Benzylpiperidine, 4-PMPD
- 4-Fluoroethylphenidate, 4F-EPH, 4-FEPH
- 4-Fluoromethylphenidate, 4F-MPH, 4-FMPH
- 4-Methylmethylphenidate, 4-Me-TMP, 4-MMMPH
- Benocyclidine, BTCP
- Desoxypipradrol, 2-DPMP, 2-Diphenylmethylpiperidine
- Dichloropane, RTI-111, O-401
- Ethylphenidate, EPH
- HDEP-28, Ethylnaphthidate
- HDMP-28, Methylnaphthidate
- Isopropylphenidate, IPH, IPPD
- Meprylcaine
- Nitracaine, 4-Nitro-Dimethocaine
- Pipradrol, Meratran
- Propylphenidate, PPH
- Troparil, WIN 35,065-2,  $\beta$ -CPT

## Oxazolidines

Oxazolidines are a five-membered ring compounds consisting of three carbons, a nitrogen, and an oxygen. The oxygen and NH are the 1 and 3 positions, respectively. In oxazolidine derivatives, there is always a carbon between the oxygen and the nitrogen.

- 4,4'-Dimethylaminorex, 4,4'-DMAR, "Serotoni"

## Phenylmorpholines

Phenylmorpholines are a class of stimulants containing a phenethylamine skeleton in which the terminal amine is incorporated into a morpholine ring.

- Isophenmetrazine, PAL-730<sup>[59]</sup>
- 2-Hydroxy-4'-Ethylphenmetrazine, 2-HO-4'-EPM, 2-Hydroxyphenmetetrazine, N-Ethylphenmetrazol
- 3,4-Methylenedioxyphendimetrazine, MDMPM
- 3-Fluorophenetetrazine, 3-FPE<sup>[60]</sup>
- 3-Fluorophenmetrazine, 3-FPM, PAL-593
- 3-Methylphenmetrazine, 3-MPM, PAL-773
- N-Ethylphenmetrazine, Phenmetetrazine<sup>[61]</sup>
- 4-Methylphenmetrazine, 4-MPM<sup>[62]</sup>
- 6-Methylphenmetrazine, 6-MPM
- G-130
- Methylmorphenate
- PDM-35, 5-Methylphenmetrazine, 5-MPM
- Phenetrazine, PE<sup>[63]</sup>
- Viloxazine

## Misc

- 1,3-Dimethylbutylamine, 1,3-DMBA, "AMP-Citrate"
- 2-AI
- 2-MPPP, 2-methyl-1-phenyl-3-(piperidin-1-yl)propan-1-one
- 4-Fluorodimethocaine
- Amfonelic acid, AFA, WIN 25,978
- Bromantane
- Camfetamine
- CRL-40,940, Bisfluoromodafinil
- CRL-40,941, Fladrafinil, Fluorafinil
- Diclofensine, Ro 8-4650
- Dimethocaine, Larocaine
- Homomazindol
- Mephtetramine, MTTA<sup>[64]</sup>
- Methylhexanamine, DMAA
- Modafiedz, Methyldifluoromodafinil<sup>[65]</sup>

## Sedatives

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Sedatives are substances that induces sedation by reducing irritability or excitement. At higher doses they may result in slurred speech, staggering gait, poor judgment, and slow, uncertain reflexes. Doses of sedatives such as benzodiazepines, when used as a hypnotic to induce sleep, tend to be higher than amounts used to relieve anxiety, whereas only low doses are needed to provide a peaceful effect. Sedatives can be misused to produce an overly-calming effect. In the event of an overdose or if combined with another sedative, many of these drugs can cause unconsciousness and even death.

## Opioids

Opioids have pharmacologic actions resembling morphine and other components of opium.

- 2-Fluoroviminol, 2F-Viminol
- 2-Methyl-AP-237
- 3-Methylbutyrfentanyl, 3-MBF
- 3-Methylfentanyl, 3-MF
- 4-Chloroisobutyrfentanyl, 4-ClBF, p-ClBF
- 4-Fluorobutyrfentanyl, 4-FBF, p-FBF
- 4-Fluoroisobutyrfentanyl, 4-FiBF, p-FiBF
- 4-Methoxybutyrfentanyl, 4-MeO-BF, p-MeO-BF
- 4-Fluorofentanyl, 4-FF, p-FF
- p-hydroxy-butyrylfentanyl<sup>[66]</sup>
- Acetylfentanyl, AF
- Acetoxymethylketobemidone, O-AMKD
- Acrylfentanyl
- AH-7921
- α-Methylfentanyl, "China White"
- AP-237
- Butyrfentanyl, BF
- Bromadoline, U-47931E
- Brorphine<sup>[67]</sup>
- Clonitazene
- Cyclopentylfentanyl, CP-F
- Cyclopropylfentanyl
- Crotonylfentanyl
- Desmethylprodine, MPPP
- 2,2'-difluorofentanyl
- Etoazene, Desnitroetonitazene, "Etazene"
- Etonitazene
- Flunitazene
- Furanylfentanyl, Fu-F
- Isotonitazene
- Methoxyacetylfentanyl
- Metonitazene
- MT-45
- N-Desmethyl-BDPC, Norbromadol
- O-Desmethyltramadol
- Piperidylthiambutene
- Tetrahydrofuranylfentanyl, THF-F

- U-47700
- U-48800
- U-49900<sup>[68]</sup>
- U-51754<sup>[69]</sup>
- Valerylentanyl, VF

## Benzodiazepines

- 3-Hydroxyphenazepam
- Adinazolam
- Bromazolam, 2'-Desfluoroflubromazolam, 8-Bromodeschloroalprazolam
- Clonazolam, 8-Nitrodeschlorotriazolam, Clonitrazolam
- Cloniprazepam, 1-Cyclopropylmethylclonazepam<sup>[70]</sup>
- Desmethylflunitrazepam, Fonazepam
- Diclazepam, 2'-Chlorodiazepam
- Flualprazolam, Fludiazolam
- Flubromazepam
- Flubromazolam
- Flunitrazolam, 2'-Fluorodeschloroclonazolam
- Meclonazepam, 3-Methylclonazepam
- N-Desalkylflurazepam, Norflurazepam
- Nimetazepam, 3-Hydroxynimetazepam
- Nifoxipam, 3-Hydroxydesmethylflunitrazepam
- Nitrazolam
- Phenazepam
- Pyrazolam
- Ro5-4864, 4'-Chlorodiazepam

## Thienodiazepines

- Deschloroetizolam, Etizolam-2<sup>[71]</sup>
- Etizolam
- Fluclotizolam
- Metizolam, Desmethyletizolam

## GHB analogues

- 1,4-Butanediol, 1,4-BD
- GBL, γ-Butyrolactone
- GHV, γ-Hydroxyvaleric acid (4-Methyl-GHB)
- GVL, γ-Valerolactone

## Methaqualone analogues

- Afloqualone
- Etaqualone, 2-Ethynormethaqualone, "ECQ"
- Mebroqualone, 2-Bromonormmethaqualone, "MBQ"
- Mecloqualone, 2-Chloronormmethaqualone, "MCQ"

- Methylmethaqualone, 4-Methylmethaqualone, "MMQ"
- Nitromethaqualone, 2-Methoxy-4-nitronormethaqualone
- SL-164

## Misc

- 2-Methyl-2-butanol, 2M2B, tert-Amyl alcohol
- 2-Methyl-2-pentanol
- 3,4,5-Trimethoxyphenibut
- 4-Fluorophenibut
- Benzylbutylbarbiturate
- Pagoclone
- Phenibut
- Tolibut
- W-18

## Synthetic cannabinoids

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Agonists of the central cannabinoid receptor type 1 mimic the behavioral effects of cannabis.

### Classical cannabinoids

- CP 47,497 and its (C8) homologue cannabicyclohexanol
- CP 55,940
- HU-308
- HU-210

### Miscellaneous cannabinoids

- 5F-AB-FUPPYCA, AZ-037
- 5F-PCN, 5F-MN-21
- A-836,339
- AB-CHFUPYCA
- BAY 38-7271
- BIM-018
- CB-13
- EG-018
- EG-2201<sup>[72][73]</sup>
- FUBIMINA, BIM-2201, BZ-2201, FTHJ
- JTE-907
- JTE 7-31
- LY-2183240
- MDA-19
- MDMB-CHMCZCA, EGMB-CHMINACA<sup>[74][73]</sup>
- NESS-0327
- NESS-040C5
- NNL-1<sup>[75]</sup>

- QMPSSB
- WIN 55,212-2

## Indazole based

Indazole containing cannabinoid receptor agonists include:

- 4F-ADB, 4F-MDMB-PINACA
- 4F-MDMB-BINACA<sup>[76]</sup><sup>[77]</sup>
- 4CN-ADB, 4CN-MDMB-PINACA
- 5C-APINACA, 5C-AKB48<sup>[78]</sup>
- 5F-AB-PINACA
- 5F-ADB-PINACA
- 5F-ADB, 5F-MDMB-PINACA
- 5F-AMB
- 5F-APINACA, 5F-AKB48
- 5F-CUMYL-PINACA, SGT-25, C-Liquid
- 5F-EMB-PINACA, 5F-AEB
- 5F-MN-18<sup>[79]</sup>
- 5F-NPB-22<sup>[80]</sup>
- 5F-SDB-005<sup>[81]</sup>
- AB-CHMINACA
- AB-FUBINACA, PX-4
- AB-PINACA
- ADAMANTYL-THPINACA
- ADB-BINACA<sup>[82]</sup>
- ADB-BUTINACA
- ADB-CHMINACA, MAB-CHMINACA, "MA-CHMINACA"
- ADB-FUBINACA, MAB-FUBINACA
- ADB-PINACA, MAB-PINACA
- ADSB-FUB-187
- AMB<sup>[83]</sup>
- AMB-CHMINACA, "MA-CHMINACA"
- AMB-FUBINACA, FUB-AMB, MMB-FUBINACA
- APINACA, AKB48
- APP-BINACA, APP-BUTINACA<sup>[84]</sup>
- APP-FUBINACA, PX-4
- BiPICANA<sup>[85]</sup>
- CUMYL-4CN-BINACA, SGT-78
- CUMYL-PINACA, SGT-24
- CUMYL-THPINACA, SGT-42
- EMB-FUBINACA, FU-AEB<sup>[86]</sup>
- FAB-144
- FUB-APINACA, FUB-AKB48
- FUB-NPB-22<sup>[87]</sup>
- IPO-33

- MDMB-4en-PINACA
- MDMB-CHMINACA, MDMB(N)-CHM
- MDMB-FUBINACA, MDMB(N)-Bz-F, MDMB-Bz-F, FUB-MDMB
- MN-18
- NPB-22<sup>[88]</sup>
- PX-2, 5F-APP-PINACA, FU-PX, PPA(N)-2201
- PX-3, APP-CHMINACA
- SDB-005
- THJ-018
- THJ-2201

## Indole based

Indole containing cannabinoid receptor agonists include:

- 4-HTMPIPO
- 5C-MN-24, 5C-NNEI<sup>[44]</sup>
- 5F-AB-PICA<sup>[89]</sup>
- 5F-ADBICA
- 5F-AMB-PICA, I-AMB, MMB-2201
- 5F-AMP
- 5F-NNE1, 5F-NNEI, 5F-MN-24
- 5F-PY-PICA<sup>[90]</sup>
- 5F-SDB-006
- AB-005
- AB-BICA<sup>[82]</sup>
- AB-FUBICA
- AB-PICA
- ADB-BICA<sup>[75]</sup>
- ADB-FUBICA
- ADBICA, ADB-PICA
- APICA, SDB-001, 2NE1
- AMB-CHMICA, MMB-CHMICA, "MA-CHMINACA"<sup>[91]</sup>
- BzODZ-EPyr
- CUMYL-PeGACLONE, SGT-151<sup>[92]</sup>
- CUMYL-PICA
- FDU-NNE1, FDU-NNEI, FDU-MN-24
- FUB-144, FUB-UR-144
- LTI-701
- MDMB-CHMICA, incorrectly known as MMB-CHMINACA
- MDMB-FUBICA
- MEPIRAPIM
- MN-25
- NNE1, NNEI, MN-24
- NNL-2<sup>[75]</sup>
- Org 28611, SCH-900,111

- PTI-1
- PTI-2
- PX-1, 5F-APP-PICA, SRF-30
- SDB-006
- STS-135, 5F-APICA
- UR-144
- XLR-11, 5F-UR-144

## **Quinolinylindoles**

- 5F-PB-22
- BB-22, QUCHIC
- FDU-PB-22
- FUB-PB-22
- PB-22, QUPIC

## **Benzoylindoles**

- AM-630
- AM-679
- AM-694
- AM-1241
- AM-2233
- RCS-4

## **Adamantoylindoles**

- AB-001
- AB-002
- AM-1248

## **Naphthoylindoles**

- AM-1220
- AM-1221
- AM-1235
- AM-2201
- AM-2232
- CBL-018, NM-018<sup>[93]</sup>
- EAM-2201
- FUB-JWH-018
- JWH-007
- JWH-015
- JWH-018
- JWH-019
- JWH-073
- JWH-081
- JWH-098
- JWH-116

- [JWH-122](#)
- [JWH-149](#)
- [JWH-182](#)
- [JWH-193](#)
- [JWH-198](#)
- [JWH-200](#)
- [JWH-210](#)
- [JWH-398](#)
- [JWH-424](#)
- [MAM-2201](#)
- [NE-CHMIMO](#)
- [NM-2201, CBL-2201](#)

## **Phenylacetylindoles**

- [JWH-167](#)
- [JWH-203](#)
- [JWH-249](#)
- [JWH-250](#)
- [JWH-251](#)
- [JWH-320<sup>\[94\]</sup>](#)
- [RCS-8](#)

## **Androgens**

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Androgenic anabolic steroids have approved medical uses as well as used illicitly as performance-enhancing drugs to build muscle mass and strength. Anabolic steroids that have been designed to evade detection in sport doping tests are known as "designer steroids".<sup>[95][96]</sup>

### **Testosterone based**

- [4-Chlorodehydromethyltestosterone, Turinabol](#)
- [11-Ketotestosterone](#)
- [Adrenosterone](#)
- [Boldenone](#)
- [Clostebol, 4-Chloro-Testosterone](#)
- [Fluoxymesterone, Halotestin](#)
- [Methandrostenolone, Dianabol](#)
- [Methyltestosterone, Methyltestosterone](#)
- [Testosterone](#)

### **DHT based**

- [1-Testosterone, Dihydroboldenone](#)
- [Desoxymethyltestosterone, Madol, "DMT"](#)
- [Dihydrotestosterone, DHT](#)
- [Drostanolone, Masteron](#)
- [Epiandrosterone](#)

- Mestanolone
- Mesterolone, Proviron
- Metenolone enanthate, Primobolan
- Methasterone, Superdrol, Methasteron, Methyldrostanolone
- Methyl-1-testosterone, M1T
- Oxandrolone, Anavar
- Oxymetholone, Anadrol
- Prostanozol, prodrug for Stanozolol
- Stanozolol, Winstrol

## **Estranes**

- Dimethandrolone
- Dimethyltrenolone
- Metribolone, Methyltrenbolone
- Mibolerone, Cheque Drops
- Nandrolone, Deca durabolin, NPP
- Norbolethone, Genabol
- Tetrahydrogestrinone, THG, "The Clear"
- Trenbolone
- Trestolone, MENT

## **SARMs**

Selective androgen receptor modulators (SARMs) are a novel class of androgen receptor ligands. They are intended to maintain the desirable muscle building effects of anabolic steroids while reducing undesirable androgenic actions (e.g., increased risk of prostate cancer). SARMs that are more selective in their action potentially could be used for a wider range clinical indications than the relatively limited legitimate uses that anabolic steroids are currently approved for.<sup>[97]</sup>

- AC-262,356
- Andarine, S-4, GTx-007
- JNJ-28330835<sup>[98][99]</sup>
- BMS-564,929
- Enobosarm, Ostarine, GTx-024, MK-2866
- LGD-2226
- LGD-3303
- LGD-4033
- RAD140
- S-40503
- S-23
- YK-11<sup>[100]</sup>

## **Others**

- 3-Aminoisobutyric acid
- Acadesine, AICAR
- AWRQNTRYSRIEAIKIQILSKRL-amide<sup>[101]</sup>

- Anserine
- beta-Hydroxybutyric acid

## Peptides

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### GHRH analogues

GHRH analogues stimulate the release of growth hormone.

- CJC-1293
- CJC-1295
- Sermorelin
- Tesamorelin

### Growth hormone secretagogue receptor agonists

Agonists of the growth hormone secretagogue receptor regulate energy homeostasis and body weight.

- Examorelin, Hexarelin
- GHRP-2
- GHRP-6
- Ibutamoren, MK-677, L-163,191
- Ipamorelin

### Others

- Bremelanotide, PT-141
- BPC-157
- Carnosine
- Delta sleep - inducing peptide
- IGF-1 Ec, MGF
- Melanotan
- Melanotan II
- P21
- TB500

## PDE5 inhibitors

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PDE5 inhibitors are typically used to treat erectile dysfunction and improve sexual stamina.

- Acetildenafil
- Aildenafil
- Aminotadalafil<sup>[102]</sup>
- Gendenafil
- Homosildenafil
- Hydroxyacetildenafil
- Hydroxythiomosildenafil

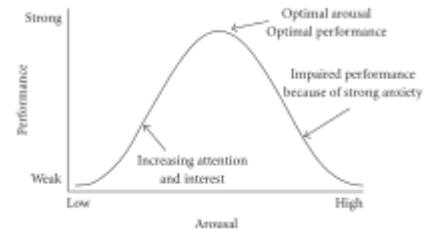
- Lodenafil
- Nitrosoprodenafil
- Piperidinoacetildenafile
- Piperidinovardenafil
- Sulfoaildenafil
- Thiosildenafil

## **Nootropics**

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### **Central nervous system stimulants**

Systematic reviews and meta-analyses of clinical human research using low doses of certain central nervous system stimulants found that these drugs enhance cognition in healthy people.<sup>[103][104][105]</sup> In particular, the classes of stimulants that demonstrate cognition-enhancing effects in humans act as direct agonists or indirect agonists of dopamine receptor D<sub>1</sub>, adrenoceptor A<sub>2</sub>, or both types of receptor in the prefrontal cortex.<sup>[103][104][106][107]</sup> Relatively high doses of stimulants cause cognitive deficits.<sup>[106][107]</sup>



Hebbian version of the Yerkes–Dodson law

- Amphetamine – systematic reviews and meta-analyses report that low-dose amphetamine improves cognitive functions (e.g., inhibitory control, episodic memory, working memory, and aspects of attention) in healthy people and in individuals with ADHD.<sup>[103][104][105][107]</sup> A 2014 systematic review noted that low doses of amphetamine also improve memory consolidation, in turn leading to improved recall of information in non-ADHD youth.<sup>[105]</sup> It also improves task saliency (motivation to perform a task) and performance on tedious tasks that required a high degree of effort.<sup>[104][106][107]</sup>
- Methylphenidate – a benzylpiperidine that improves working memory, episodic memory, and inhibitory control, aspects of attention, and planning latency in healthy people.<sup>[103][104][105]</sup> It also may improve task saliency and performance on tedious tasks.<sup>[107]</sup> At above optimal doses, methylphenidate has off-target effects that decrease learning.<sup>[108]</sup>
- Eugeroics (armodafinil and modafinil) – are classified as "wakefulness-promoting agents"; modafinil increases alertness, particularly in sleep-deprived individuals, and facilitates reasoning and problem solving in non-ADHD youth.<sup>[105]</sup> In a systematic review of small, preliminary studies where the effects of modafinil were examined, when simple psychometric assessments were considered, modafinil intake enhanced executive function.<sup>[109]</sup> Modafinil may not produce improvements in mood or motivation in sleep deprived or non-sleep deprived individuals.<sup>[110]</sup>
- Caffeine – a meta-analysis found an increase in alertness and attentional performance.<sup>[111][106]</sup>
- Nicotine – a meta-analysis of 41 clinical studies concluded that nicotine administration or smoking improves alerting and orienting attention and episodic and working memory and slightly improves fine motor performance.<sup>[112]</sup>