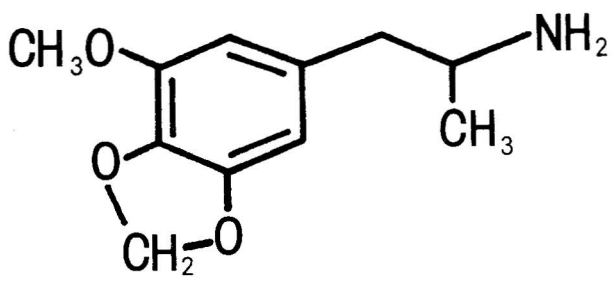
Profiles of Psychedelic Drugs



3. MMDA

Description and Properties: MMDA, 3-methoxy-4,5-methylenedioxyamphetamine, *beta*-aminodihydromyristicin, 1-(3-methoxy-4,5-methylenedioxyphenyl)-2-aminopropane is a colorless oil which forms a white crystalline hydrochloride, with m.p. 190-191° from isopropanol. The salt is an air-stable powder which is soluble in water and alcohol, and insoluble in ether and acetone.

History: The first synthesis of MMDA was achieved in 1962; its psychopharmacological properties were discovered and defined that same year. The compound has never been reported in nature, although it is closely allied both biochemically and pharmacologically to the essential oil 1-allyl-3-methoxy-4,5-methylenedioxybenzene. This natural product, with the common name myristicin, is a major component of the spices nutmeg and mace, prepared from the seed of the nutmeg tree *Myristica fragrans*. The acronym MMDA must not be confused with MDMA which has been used to represent *m*ethylene*d*ioxy-*m*eth*a*mphetamine, a MDA homolog which has recently appeared sporadically in street usage and which shall be described in a forthcoming profile.

Human Biochemistry and Pharmacology: The intoxicating factors of oil of nutmeg are thought to include the three ethers myristicin, elemicin and safrole, which on amination give rise to the three substituted amphetamine analogs MMDA, TMA and MDA. This conversion can be effected chemically with ease, but although the addition of ammonia has been shown to occur in *in vitro* tissue homogenates, there is at present no evidence that any of these centrally active bases can be formed *in vivo*. The metabolic fate and the kinetics of blood and tissue levels of MMDA, in either experimental animals or in humans, are as yet unstudied.

Human Psychopharmacology: The threshold dosage of MMDA in humans is 75 mg (as the hydrochloride salt) and the average effective dose is 150 mg, orally. The first physical symptoms (mydriasis, minor dizziness, fleeting nausea) are apparent at 30-60 minutes. The psychological effects are first noted about 1½ hours following ingestion and are of relatively short duration with peaking in another hour; these are largely dissipated in yet another two hours. During this period of intoxication, there is a minimum of sensory distortion, but rather a pervasive mood-intensification. In the absence of external stimulation, an accentuation of feelings (both anxiety and euphoria), the spontaneous visualization of images (with eyes closed), a generalized drowsiness and relaxation, and a consistent over-estimation of elapsed time are experienced. The imagery is dream-like in that the subject matter cannot be chosen and it can be voluntarily dispelled by opening the eyes. Eyes-open phenomena, such as color enhancement and distortion of faces and objects, are extremely rare.

In comparison to most psychedelic drugs, MMDA must be considered to be very mild and produces a state which can be easily manipulated by either the subject or the observer. The duration of action is short, and is followed by physical relaxation which usually leads to an easy and restful sleep.

Legal Status: MMDA is listed in the Federal Controlled Substances Act as a Schedule I drug, with a registry number # 7401.

Alexander T. Shulgin
1483 Shulgin Road
Lafayette, California 94549