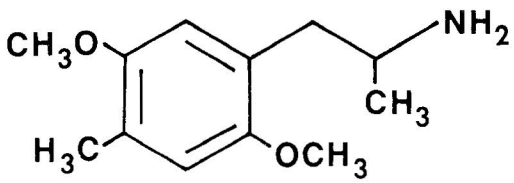
Profiles of Psychedelic Drugs



5. STP

Description and Properties: STP, 2,5-dimethoxy-4-methylphenylisopropylamine, 1-(2,5-dimethoxy-4-methylphenyl)-2-amino-propane, DOM, is an air- and light-sensitive white solid, soluble in most organic solvents, m.p. 60-61°. The hydrochloride salt is stable, and soluble in water and alcohol; m.p. 190-191°.

History: STP does not occur in nature. It was first synthesized in 1963, and its psychopharmacological activity was discovered the following year. Its original abbreviation name, DOM, arose from its structure in which a mescaline-like methoxyl group was replaced with a methyl group (*desoxym*ethyl). But with the irresponsible introduction of the drug into the Haight-Ashbury scene of mid-1967, it was given the sobriquet STP, borrowed from a popular motor oil additive "Scientifically Treated Petroleum" but quickly reassigned to "Serenity, Tranquillity and Peace." High initial dosage levels (up to 20 mg per tablet) and apparent untoward response to attempted medical treatment with antipsychotics (chlorpromazine) gave the drug a bad reputation and, except for one or two fleeting reappearances, it has passed completely from the street scene. In recent years, STP has proved to be an increasingly valuable tool in the study of the biochemistry and mechanism of action of the hallucinogenic drugs.

Human Biochemistry and Pharmacology: A number of psychedelic drugs are known which are based upon STP as a structural model. TMA-2, para-DOT (4-methylthio-2,5-dimethoxyphenylisopropylamine) and DOB (4-bromo-2,5-dimethoxyphenylisopropylamine) are all characterized by two methoxyl groups oriented *para-* to one another. This structural feature permits a metabolic demethylation to a hydroquinone which has been proven, in the case of STP, to be easily air-oxidized *in vitro* to a quinone. There can thus be generated an intermediate capable of reacting with any of several biological systems, or with itself intramolecularly to form an indole. No *in vivo* evidence has yet supported either of these processes as being involved in the mechanism of action of STP in man. The optically active isomers have been studied separately, and it is the levo-rotatory "R" isomer which accounts satisfactorily for the action of the racemate. This is the same configuration which is found in the assymetric 5-position of the biologically active isomer of LSD. No human metabolism studies have been reported, although between 5 and 20% of the administered dose is known to be excreted unchanged in the urine of normal subjects.

Human Psychopharmacology: The nature and duration of action of STP in human subjects is dose dependent. At oral dosages of between 2 and 5 mg, subjects are substantially free of objectively observed physiological change, and report no perceptual distortion. Responses which depend upon intact cognition or interpretation of visual signals were abnormal, but not in a way which has been classified as hallucinogenic or psychotomimetic. The first signs of intoxication are noted at about one hour following ingestion, and develop quickly to a maximum effect for another four or six hours. Clinical experiments with higher dosages (to 14 mg, acute, orally) showed a protracted duration of action, and the development of extensive somatic, as well as perceptual and psychic changes comparable in many respects to those observed with the use of LSD. The co-

administration of chlorpromazine (50-200 mg) to several higher-dose subjects resulted in some sedation and amelioration of the more extreme toxic symptoms. A tolerance can be rapidly developed to STP. In a series of daily 6 mg dosage administrations, there was a clear diminution of effects following the second administration, and in some subjects the third exposure produced no detectable intoxication whatsoever.

Legal Status: STP is listed in the Federal Controlled Substances Act as a Schedule I drug, with registry number 7395.

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