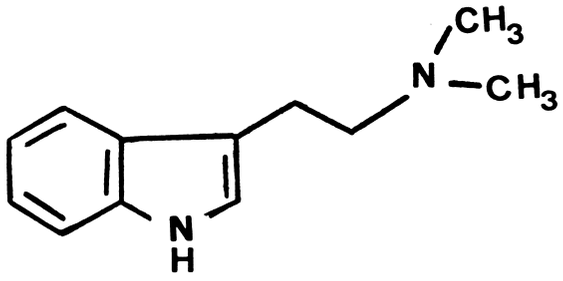
Profiles of Psychedelic Drugs

With this issue, we are introducing a new column which will present thumbnail sketches of the known psychedelic drugs. Rather than an attempt to review the existing literature on each drug (some would have hundreds of references and some perhaps two), the facts that are known concerning history, human pharmacology and human psychopharmacology will be amalgamated into a "profile." The drugs to be presented will be chosen randomly, rather than with preference given to popularity, unusual potency or current availability. Botanical mixtures will not be considered as such, but as their known active components. As there are upwards of a hundred psychedelic drugs currently known, it is expected that these "profiles" will eventually form an extensive reference atlas of compactly presented drug information.



1. DMT

Description and Properties: DMT, N,N-dimethyltryptamine, Nigerine (?), desoxybufotenine, 3-(2-dimethylaminoethyl)-indole is a white, pungent-smelling, crystalline solid with a melting point of 49-50°, hydrochloride salt hygroscopic, picrate m.p. 171-172° and methiodide m.p. 215-216°. It is insoluble in water, but soluble on organic solvents and aqueous acids.

History: DMT was first synthesized in 1931, and demonstrated to be hallucinogenic in 1956. It has been shown to be present in many plant genera (*Acacia, Anadenanthera, Mimosa, Piptadenia, Virola*) and is a major component of several hallucinogenic snuffs (*cohoba, parica, yopo*). It is also present in the intoxicating beverage *ayahuasca* made from *Banisteriopsis caapi*, and it may have oral effectiveness due to the presence of several naturally occuring inhibitors of catabolic deamination.

Human Biochemistry and Pharmacology: Both the parent compound tryptamine and the N-methyltransferase system which is capable of converting it to DMT, occur in humans, but there is as yet no evidence that DMT is formed *in vivo*. DMT has nonetheless been identified in trace amounts in the blood and urine of both normals and of schizophrenic patients, but its origins and functions are unknown. Following intramuscular administration, maximum blood levels of about 100 ng/ml are observed in 10 minutes, coincident with the maximum changes in electroencephalographic responses. The plasma clearance $t^{1/2}$ is about 15 minutes. Elevated blood levels of indoleacetic acid (IAA) are seen during the time of peak effects, implying its role as a metabolite. Urine levels of IAA are also elevated and account for about 30% of the administered drug. An increase in 5-hydroxy-IAA excretion suggests the involvement of serotonin in DMT action. Unchanged DMT is not excreted.

Human Psychopharmacology: DMT is inactive orally at dosages of over 1000 mg. With intramuscular injection, there is an abrupt threshold of activity shown with 30 mg, and a complete psychedelic experience results from the administration of 50-70 mg (75 mg subcutaneously, 30 mg by inhalation). An unusual feature of the induced intoxication is the speed of onset and short duration. Within 5 minutes of administration there is mydriasis, tachycardia, a measurable increase in blood pressure and related vegetative disturbances which usually persist throughout the drug experience. In 10-15 minutes, the full intoxication is realized, generally characterized by hallucinations with the eyes either open or closed, and extensive movement within the visual field. There is difficulty in the expression of one's thoughts, and in concentrating on a given subject. There is usually a mood change to the euphoric with unmotivated laughter, but instances have been reported in which paranoid ideation has promoted anxieties and feelings of foreboding into a state of panic. The subject is largely

symptom-free at 60 minutes, although some residual effects have been seen in the second hour. With the inhalation route of administration the time scale is contracted, with onset of effects noted in 10 seconds, a short period of full intoxication at 2-3 minutes, and a complete freedom from any residual effects within 10 minutes. At higher drug levels, there are increased vegetative symptoms, and these effectively overwhelm the psychedelic experience at dosages of 150 mg *i.m.* Interactions with other drugs are rarely seen; a sensitivity has been observed with pretreatment with methysergide, but there is no cross-tolerance with LSD. Repeated usage does not appear to lead to either physical or psychological dependency.

Legal Status: DMT is explicitly named as a Schedule I drug in the Federal Controlled Substances Act; registry number 7435.

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