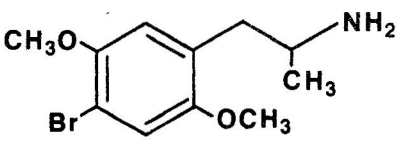
Profiles of Psychedelic Drugs



10. DOB

Description and Properties: DOB, PBR, 2,5-dimethoxy-4-bromoamphetamine, 2,5-dimethoxy-4-bromophenylisopropylamine is a colorless base which forms a white crystalline hydrochloride salt (from isopropanol or from ethanol-ether) with m.p. 198-199°C.

History: Within a period of a year, three separate laboratories completed and published chemical studies resulting from the concept of introducing the bromine atom into chemically receptive, but pharmacologically uninteresting, polyalkoxyamphetamine derivatives. One of these materials, DOB, has proved to be the most potent phenethylamine psychedelic yet described. It is also unique among the psychedelic drugs (and among most CNS-active drugs in general) in possessing an atom of high atomic weight that is intrinsic to its effectiveness.

Biochemistry and Pharmacology: The structural parameter of a metabolically refractory substituent at the 4-position of a substituted amphetamine has led to drugs of consistently high potency (DOB, DOI, DOM, Aleph-1, TMA-2). Although DOB lacks the versatility of homologation, its high potency (circa 25 mcg/kg), unusual therapeutic index (circa 4,000; LD_{50}mice/ED_{50}human) and the presence of a heavy hetero-atom amenable to radioisotope labeling have made it an attractive drug for research. Use of gamma-emitting radiobromine has provided the first viewing of the *in vivo* kinetics of a psychedelic drug in normal human subjects. DOB is first accumulated in the lung (subsequent to i.v. administration), followed by later maxima in the liver and the brain with kinetics that parallel the psychopharmacological chronology. It is excreted as water-soluble metabolites, with a small amount of unchanged drug present, and virtually no ionic bromide. Studies of the optical isomers show that the "R" isomer is the principal active form, in keeping with most psychedelic amphetamine analogs and opposite to the active form of amphetamine itself (dextroamphetamine, "S").

Human Psychopharmacology: The effective oral dosage of DOB is 2-3 mg of the racemate or 1-2 mg of the "R" isomer. The chronology of effects is extremely long-lived. The first awareness of change is noted in about an hour and full intoxication is rarely achieved until the three or four hour point. During the plateau (4th to 10th hour) there is rich fantasy and easy access to personal problems (eyes closed) but little visual distortion. A gradual descent follows with achievement of starting baseline levels at the 24th to 36th hour following ingestion. During this time one may achieve fitful sleep, but there are no subsequent physical difficulties. Larger dosages have been reported to lead to cardiovascular distress and convulsive complications. A death has been reported at an alleged dose of 35 mg. A 75 mg dose, in a person with tolerance (rapidly acquired), has led to ergotism-like complications requiring amputation. There also appears to be a possible synergistic interaction with alcohol.

Legal Status: DOB and its optical isomers are listed in the Federal Controlled Substances Act as Schedule I drugs, with the registry number 7391.

Alexander T. Shulgin
1483 Shulgin Road
Lafayette, California 94549