CONFORMATIONAL ANALYSIS OF THE NEUROTRANSMITTER SEROTONIN

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Serotonin (5-hydroxytryptamine) is an important neurotransmitter linked to depression. It is used by the pharmaceutical industry in anti-depression drugs. We will report on a spectroscopic investigation of gas-phase serotonin cooled in a supersonic expansion. UV-UV hole-burning spectroscopy was used to prove that there are five distinct conformations split into two sets separated by 230 cm^{-1}, the same spacing observed in previous work between *cis* and *trans* isomers of 5-hydroxyindole. Infrared spectra of these five conformations in the C-H, indole N-H, and O-H stretch fundamental region will be compared with those in its close analogs tryptamine and 5-hydroxyindole to determine conformational assignments for the isomers of serotonin.