

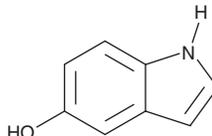
# PRODUCT INFORMATION



## 5-Hydroxyindole

Item No. 36431

CAS Registry No.: 1953-54-4  
Formal Name: 1H-indol-5-ol  
Synonym: NSC 87503  
MF: C<sub>8</sub>H<sub>7</sub>NO  
FW: 133.1  
Purity: ≥98%  
Supplied as: A solid  
Storage: -20°C  
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

5-Hydroxyindole is supplied as a solid. A stock solution may be made by dissolving the 5-hydroxyindole in the solvent of choice, which should be purged with an inert gas. 5-Hydroxyindole is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of 5-hydroxyindole in these solvents is approximately 5, 2, and 1 mg/ml, respectively.

### Description

5-Hydroxyindole is a neuroactive metabolite of L-tryptophan (Item No. 29600).<sup>1</sup> It is formed from L-tryptophan by gut microbiota expressing tryptophanase (TnaA) via 5-hydroxy-L-tryptophan (5-HTP; Item No. 20539) and indole intermediates.<sup>1,2</sup> 5-Hydroxyindole (0.03-30 mM) potentiates transient inward currents induced by acetylcholine (Item No. 23829) in *Xenopus* oocytes expressing  $\alpha 7$  nicotinic acetylcholine receptors (nAChRs).<sup>3</sup> It also potentiates ion currents induced by serotonin (5-HT; Item No. 14332) in N1E-115 mouse neuroblastoma cells when used at a concentration of 1 mM.<sup>4</sup> 5-Hydroxyindole (30 mg/kg) decreases gastrointestinal transit time in rats.<sup>2</sup> It induces convulsions in rats when administered at doses ranging from 50 to 100 mg/kg.<sup>5</sup> Serum 5-hydroxyindole levels are positively correlated with working memory in patients with schizophrenia.<sup>1</sup>

### References

- Huang, J., Tong, J., Zhang, P., *et al.* Effects of neuroactive metabolites of the tryptophan pathway on working memory and cortical thickness in schizophrenia. *Transl. Psychiatry* **11(1)**, 198 (2021).
- Waclawiková, B., Bullock, A., Schwalbe, M., *et al.* Gut bacteria-derived 5-hydroxyindole is a potent stimulant of intestinal motility via its action on L-type calcium channels. *PLoS Biol.* **19(1)**, e3001070 (2021).
- Zwart, R., De Filippi, G., Broad, L.M., *et al.* 5-Hydroxyindole potentiates human  $\alpha 7$  nicotinic receptor-mediated responses and enhances acetylcholine-induced glutamate release in cerebellar slices. *Neuropharmacology* **43(3)**, 374-384 (2002).
- van Hoof, J.A., van der Haar, E., and Vijverberg, H.P. Allosteric potentiation of the 5-HT<sub>3</sub> receptor-mediated ion current in N1E-115 neuroblastoma cells by 5-hydroxyindole and analogues. *Neuropharmacology* **36(4-5)**, 649-653 (1997).
- Mannaioni, G., Carpenedo, R., and Moroni, F. 5-hydroxyindole causes convulsions and increases transmitter release in the CA1 region of the rat hippocampus. *Br. J. Pharmacol.* **138(1)**, 245-253 (2003).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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