
Product Data Sheet

Product Name: 5-Hydroxyindole

Cat. No.: GC61648

Chemical Properties

Cas. No. 1953-54-4

SMILES OC1=CC2=C(NC=C2)C=C1

Formula C₈H₇NO

M.Wt 133.15

Solubility DMSO : 50 mg/mL (375.52 mM; Need ultrasonic) Storage Store at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure

Background

5-Hydroxyindole is a neuroactive metabolite of L-tryptophan.¹ It is formed from L-tryptophan by gut microbiota expressing tryptophanase (TnaA) *via* 5-hydroxy-L-tryptophan and indole intermediates.^{1,2} 5-Hydroxyindole (0.03-30 mM) potentiates transient inward currents induced by acetylcholine in *Xenopus* oocytes expressing $\alpha 7$ nicotinic acetylcholine receptors (nAChRs).³ It also potentiates ion currents induced by serotonin in N1E-115 mouse neuroblastoma cells when used at a concentration of 1 mM.⁴ 5-Hydroxyindole (30 mg/kg) decreases gastrointestinal transit time in rats.² It induces convulsions in rats when administered at doses ranging from 50 to 100 mg/kg.⁵ Serum 5-hydroxyindole levels are positively correlated with working memory in patients with schizophrenia.¹

1.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)

2.Waclawiková, B., Bullock, A., Schwalbe, M., et al. Gut bacteria-derived 5-hydroxyindole is a potent stimulant of intestinal motility via its action

Caution: Product has not been fully validated for medical applications. For research use only.

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on L-type calcium channels *PLoS Biol.* 19(1)e3001070(2021) 3. 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) 4. van Hooft, J.A., van der Haar, E., and Vijverberg, H.P. Allosteric potentiation of the 5-HT₃ receptor-mediated ion current in N1E-115 neuroblastoma cells by 5-hydroxyindole and analogues *Neuropharmacology* 36(4-5)649-653(1997) 5. 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)

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