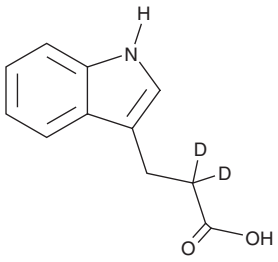
PRODUCT INFORMATION

Indole-3-propionic Acid-d_2

Item No. 43990

CAS Registry No.: 2469257-98-3
Formal Name: 1H-indole-3-d_2-propanoic acid
Synonym: 3-Indolepropionic Acid-d_2
MF: $C_{11}H_9D_2NO_2$
FW: 191.2
Chemical Purity: ≥98% (Indole-3-propionic Acid)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_2); ≤1% d_0
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

Indole-3-propionic Acid-d_2 is intended for use as an internal standard for the quantification of indole-3-propionic acid (Item No. 28821) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Indole-3-propionic Acid-d_2 is supplied as a solid. A stock solution may be made by dissolving the indole-3-propionic acid-d_2 in the solvent of choice, which should be purged with an inert gas. Indole-3-propionic Acid-d_2 is soluble in DMSO.

Description

Indole-3-propionic acid is a bacterial metabolite that has antioxidant and neuroprotective activities.[1-3] It scavenges ABTS (Item No. 27317) radicals in a cell-free assay when used at concentrations ranging from 50 to 150 µM and decreases hydrogen peroxide-induced malondialdehyde (MDA) levels in rat striatal membranes (IC_{50} = 180 µM).[2] Indole-3-propionic acid also reduces increases in MDA levels induced by amyloid β (1-42) (Item No. 20574) in PC12 cells.[4] It decreases ischemia-induced increases in cell death of pyramidal neurons and levels of 4-hydroxy nonenal (HNE; Item No. 32100) and glial fibrillary acidic protein (GFAP) in the hippocampal CA1 region in gerbils when administered at a dose of 10 mg/kg per day.[3]

References

1. Wikoff, W.R., Anfora, A.T., Liu, J., *et al.* Metabolomics analysis reveals large effects of gut microflora on mammalian blood metabolites. *Proc. Natl. Acad. Sci. USA* **106(10)**, 3698-3703 (2009).
2. Poeggeler, B., Pappolla, M.A., Hardeland, R., *et al.* Indole-3-propionate: A potent hydroxyl radical scavenger in rat brain. *Brain Res.* **815(2)**, 382-388 (1999).
3. Hwang, I.K., Yoo, K.-Y., Li, H., *et al.* Indole-3-propionic acid attenuates neuronal damage and oxidative stress in the ischemic hippocampus. *J. Neurosci. Res.* **87(9)**, 2126-2137 (2009).
4. Chyan, Y.-J., Poeggeler, B., Omar, R.A., *et al.* Potent neuroprotective properties against the Alzheimer β-amyloid by an endogenous melatonin-related indole structure, indole-3-propionic acid. *J. Biol. Chem.* **274(31)**, 21937-21942 (1999).

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