

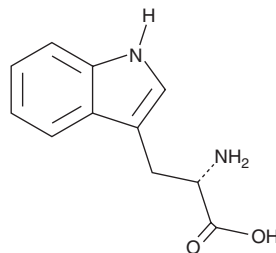
PRODUCT INFORMATION



L-Tryptophan

Item No. 29600

CAS Registry No.: 73-22-3
Synonyms: NSC 13119, (-)-Tryptophan
MF: C₁₁H₁₂N₂O₂
FW: 204.2
Purity: ≥98%
UV/Vis.: λ_{max}: 220 nm
Supplied as: A crystalline 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

L-Tryptophan is supplied as a crystalline solid. Aqueous solutions of L-tryptophan can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of L-tryptophan in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

L-Tryptophan is an essential amino acid.¹ It serves as a substrate for tryptophan hydroxylase (TPH), indoleamine-2,3-dioxygenase (IDO), and tryptophan-2,3-dioxygenase (TDO) for the biosynthesis of serotonin (5-HT; Item No. 14332) and kynurenine (Item No. 11305).² L-Tryptophan is also metabolized by enteric bacteria expressing tryptophanase into indole, pyruvate, and ammonia.³ It increases 5-HT, 5-hydroxy-L-tryptophan (5-HTP; Item No. 20539), and 5-hydroxyindolacetic acid (5-HIAA; Item No. 22889) levels in the diencephalon of rats when administered at a dose of 300 mg/kg.⁴ L-Tryptophan decreases immobility time in the forced swim test in rats when administered at doses of 4 and 20 mg/kg per day for eight weeks.⁵

References

1. Richard, D.M., Dawes, M.A., Mathias, C.W., *et al.* L-Tryptophan: Basic metabolic functions, behavioral research and therapeutic indication. *Int. J. Tryptophan Res.* **2**, 45-60 (2009).
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3. 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).
4. Esteban, S., Nicolaus, C., Garmundi, A., *et al.* Effect of orally administered L-tryptophan on serotonin, melatonin, and the innate immune response in the rat. *Mol. Cell Biochem.* **267(1-2)**, 39-46 (2004).
5. Ouakki, S., El Mrabet, F.Z., El Hessni, A., *et al.* Conversion of L-tryptophan into melatonin is the possible action pathway involved in the effect of L-tryptophan on antidepressant-related behavior in female rats: Analysis of the influence of treatment duration. *J. Behav. Brain Sci.* **3(4)**, 362-372 (2013).

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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