

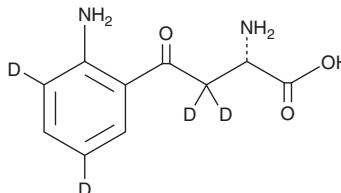
PRODUCT INFORMATION



L-Kynurenine-d₄

Item No. 36307

CAS Registry No.: 2672568-86-2
Formal Name: (S)-2-amino-4-(2-aminophenyl-3,5-d₂)-4-oxobutanoic-3,3-d₂ acid
Synonyms: 3-anthraniloyl-Alanine-d₄, L-KYN-d₄
MF: C₁₀H₈D₄N₂O₃
FW: 212.2
Chemical Purity: ≥98% (Kynurenine)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₄); ≤1% d₀
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

L-Kynurenine-d₄ is intended for use as an internal standard for the quantification of kynurenine 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).

L-Kynurenine-d₄ is supplied as a solid. A stock solution may be made by dissolving the L-kynurenine-d₄ in the solvent of choice, which should be purged with an inert gas. L-Kynurenine-d₄ is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of L-kynurenine-d₄ in these solvents is approximately 2, 1, and 0.5 mg/ml, respectively.

Description

L-Kynurenine is an active metabolite of tryptophan (Item Nos. 29600 | 31210).¹ It is formed from tryptophan via tryptophan 2,3-dioxygenase (TDO) or indoleamine 2,3-dioxygenase (IDO). L-Kynurenine binds to the aryl hydrocarbon receptor (AhR; K_d = ~4 μM) and increases the activity of ethoxyresorufin-O-deethylase (EROD) in H-4-II-E rat hepatoma cells (EC₅₀ = 12.3 μM).² It decreases intracellular concentrations of NAD⁺ (Item No. 16077) in, and increases lactate dehydrogenase (LDH) activity in the supernatant of, primary human astrocytes and neurons in a concentration-dependent manner.³ L-Kynurenine in combination with IFN-γ reduces lung injury induced by *A. fumigatus* infection in the p47^{phox}^{-/-} mouse model of chronic granulomatous disease.⁴

References

1. Stone, T.W., Forrest, C.M., and Darlington, L.G. Kynurenine pathway inhibition as a therapeutic strategy for neuroprotection. *FEBS J.* **279**(8), 1386-1397 (2012).
2. Opitz, C.A., Litzenburger, U.M., Sahm, F., et al. An endogenous tumour-promoting ligand of the human aryl hydrocarbon receptor. *Nature* **478**(7368), 197-203 (2011).
3. Braidy, N., Grant, R., Brew, B.J., et al. Effects of kynurenine pathway metabolites on intracellular NAD⁺ synthesis and cell death in human primary astrocytes and neurons. *Int. J. Tryptophan Res.* **2**, 61-69 (2009).
4. Romani, L., Fallarino, F., De Luca, A., et al. Defective tryptophan catabolism underlies inflammation in mouse chronic granulomatous disease. *Nature* **451**(7175), 211-215 (2008).

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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