

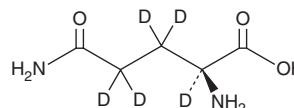
PRODUCT INFORMATION



L-Glutamine-d₅

Item No. 34839

CAS Registry No.: 14341-78-7
Formal Name: L-Glutamine-2,3,3,4,4-d₅
Synonyms: L-Gln-d₅, (S)-2,5-Diamino-5-Oxopentanoic Acid-d₅, (+)-Glutamine-d₅
MF: C₅H₅D₅N₂O₃
FW: 151.2
Chemical Purity: ≥98% (L-Glutamine)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₅); ≤1% d₀
Supplied as: A solid
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

L-Glutamine-d₅ is intended for use as an internal standard for the quantification of L-glutamine (Item No. 23716) 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).

Description

L-Glutamine is a conditionally essential amino acid involved in many biochemical processes. It is synthesized *in vivo* by glutamate and ammonia.² It serves as a substrate for glutamine synthetase in neurons for the biosynthesis of the major excitatory and inhibitory neurotransmitters glutamate and GABA.¹ L-Glutamine decreases adhesion of sickle red blood cells (RBCs) to human umbilical vein endothelial cells (HUVECs) when incubated *ex vivo* with patient-derived autologous plasma either alone or with LPS.³ It has commonly been used in cell culture media. Formulations containing L-glutamine have been used in the treatment of sickle cell disease.

References

1. Bak, L.K., Schousboe, A., and Waagepetersen, H.S. The glutamate/GABA-glutamine cycle: Aspects of transport, neurotransmitter homeostasis and ammonia transfer. *J. Neurochem.* **98**(3), 641-653 (2006).
2. Eisenberg, D., Gill, H.S., Pfluegl, G.M.U., *et al.* Structure-function relationships of glutamine synthetases. *Biochim Biophys. Acta.* **1477**(1-2), 122-145 (2000).
3. Niihara, Y., Matsui, N.M., Shen, Y.M., *et al.* L-glutamine therapy reduces endothelial adhesion of sickle red blood cells to human umbilical vein endothelial cells. *BMC Blood Disord.* **5**(4), (2005).

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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