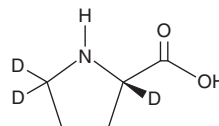


PRODUCT INFORMATION



L-Proline-d₃ Item No. 34846

CAS Registry No.: 65807-22-9
Formal Name: L-proline-2,5,5-d₃
Synonyms: L-(-)-Proline-d₃, (S)-(-)-Proline-d₃
MF: C₅H₆D₃NO₂
FW: 118.2
Chemical Purity: ≥98% (L-Proline)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₃); ≤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-Proline-d₃ is intended for use as an internal standard for the quantification of L-proline (Item No. 30772) 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-Proline-d₃ is supplied as a solid. A stock solution may be made by dissolving the L-proline-d₃ in the solvent of choice, which should be purged with an inert gas. L-Proline-d₃ is slightly soluble in methanol.

Description

L-Proline is a nonessential amino acid.¹ It contains a pyrrolidine ring, which contains the α-amino nitrogen, and is highly rigid, properties that affect protein conformation and folding and can cause kinks and turns in protein secondary structure.^{1,2} It is a substrate for the proton-coupled amino acid transporter 1 (PAT1) and an inhibitor of acetylcholinesterase (AChE; K_i = 86 μM).^{3,4} L-Proline accumulates in plants under environmental stress and is important for environmental stress tolerance through its involvement in protein synthesis, redox balance maintenance, osmoprotection, and signaling.⁵

References

1. Lodish, H., Berk, A., Zipursky, L., *et al.* Hierarchical structure of proteins. *Molecular cell biology*. Tenney, S., Ahr, K., Steyn, R., *et al.*, editors, 4th edition, W. H. Freeman (2000).
2. MacArthur, M.W. and Thornton, J.M. Influence of proline residues on protein conformation. *J. Mol. Biol.* **218(2)**, 397-412 (1991).
3. Thondorf, I., Voigt, V., Schäfer, S., *et al.* Three-dimensional quantitative structure-activity relationship analyses of substrates of the human proton-coupled amino acid transporter 1 (hPAT1). *Bioorg. Med. Chem.* **19(21)**, 6409-6418 (2011).
4. Végner, L., Peragovics, Á., Tombor, L., *et al.* Experimental confirmation of new drug-target interactions predicted by drug profile matching. *J. Med. Chem.* **56(21)**, 8377-8388 (2013).
5. Szabados, L. and Savouré, A. Proline: A multifunctional amino acid. *Trends Plant Sci.* **15(2)**, 89-97 (2010).

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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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD

ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM