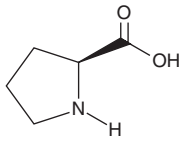
PRODUCT INFORMATION

L-Proline

Item No. 30772

CAS Registry No.: 147-85-3
Synonyms: (S)-(–)-Proline, L-(–)-Proline, NSC 46703
MF: $C_5H_9NO_2$
FW: 115.1
Purity: ≥95%
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-Proline is supplied as a crystalline solid. Aqueous solutions of L-proline can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of L-proline in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

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.[2,3] 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., and Ueno, K. 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).

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