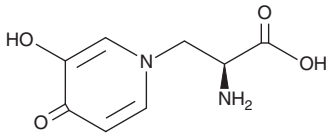
PRODUCT INFORMATION

L-Mimosine

Item No. 14337

CAS Registry No.:	500-44-7
Formal Name:	(αS)-amino-3-hydroxy-4-oxo-1(4H)-pyridinepropanoic acid
Synonyms:	Leucenol, NSC 69188
MF:	$C_8H_{10}N_2O_4$
FW:	198.2
Purity:	≥98%
UV/Vis.:	λ_{max}: 216, 283 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-Mimosine is supplied as a crystalline solid. L-Mimosine is sparingly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Description

L-Mimosine is a non-protein amino acid that can be isolated from certain plants and fungi. It chelates iron and copper and has been shown to reduce iron overload in animal models.[1,2] L-Mimosine inhibits certain enzymes that contain iron or copper, including arginase (IC_{50} = 3.7 µM), polyphenoloxidase, and dopamine hydroxylase.[2-4] It also inhibits the iron-containing enzyme deoxyhypusine hydroxlase, preventing the synthesis of the eukaryotic initiation factor 5A and blocking cell cycling.[5]

References

1. Kontoghiorghe, C. N., Kolnagou, A., and Kontoghiorghes, G. J. Phytochelators intended for clinical use in iron overload, other diseases of iron imbalance and free radical pathway. *Molecules* **20**, 20841-20872 (2015).
2. Nirmal, N. P., Benjakul, S. Inhibitory effects of mimosine on polyphenoloxidase from cephalothoraxes of Pacific white shrimp (*Litopenaeus vannamei*). *J. Agric. Food Chem.* **59(18)**, 10256-10260 (2011).
3. Ahmad, V. U., Ullah, F., Hussain, J., *et al.* Tyrosinase inhibitors from *Rhododendron collettianum* and their structure - activity relationship (SAR) studies. *Chem. Pharm. Bull.* **52(12)**, 1458-1461 (2004).
4. Hashiguchi, H. and Takahashi, H. Inhibition of two copper-containing enzymes, tyrosinase and dopamine β-hydroxylase, by L-mimosine. *Mol. Pharmacol* **13(2)**, 362-367 (1977).
5. Hanauske-Abel, H. M., Park, M. H., Hanauske, A. R., *et al.* Inhibition of the G1-S transition of the cell cycle by inhibitors of deoxyhypusine hydroxylation. *Biochim. Biophys. Acta.* **1221(2)**, 115-124 (1994).

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