PRODUCT INFORMATION



L-(+)-Ergothioneine

Item No. 14905

CAS Registry No.:	497-30-3	
Formal Name:	(αS)-α-carboxy-2,3-dihydro-N,N,N-	
	trimethyl-2-thioxo-1H-imidazole-4-	
	ethanaminium, inner salt	H
Synonyms:	2-Mercaotohistidine Betaine, NSC 7175	N N
MF:	C ₉ H ₁₅ N ₃ O ₂ S	
FW:	229.3	
Purity:	≥98%	
UV/Vis.:	λ _{max} : 218, 265 nm	ю́н
Supplied as:	A crystalline solid	
Storage:	-20°C	
Stability:	≥4 years	
Information represent	the product specifications. Patch specific analytical	results are provided on each certificate of analysis

Laboratory Procedures

L-(+)-Ergothioneine is supplied as a crystalline solid. L-(+)-Ergothioneine is sparingly soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide.

Aqueous solutions of L-(+)-ergothioneine can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of L-(+)-ergothioneine 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-(+)-Ergothioneine is a naturally-occurring amino acid derived from histidine via hercynine.¹ Ergothioneine is a stable antioxidant that scavenges and detoxifies free radicals and oxidants, increases intracellular thiol levels, controls nuclear factor- κ B activation, and inhibits inflammatory gene expression.^{2,3} In addition, it inhibits the peroxynitrite-dependent nitration of nitrotyrosine, blocks oxidative DNA damage and cell death, and prevents the formation of xanthine and hypoxanthine.^{2,4,5} Ergothioneine is transported by the organic cation/carnitine transporter 1, which has been linked with autoimmune diseases, including rheumatoid arthritis and Crohn's disease.⁶

References

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- Rahman, I. Pharmacological antioxidant strategies as therapeutic interventions for COPD. 2. Biochim. Biophys. Acta 1822(5), 714-728 (2012).
- 3. Misiti, F., Castagnola, M., Zuppi, C., et al. Role of ergothioneine on S-nitrosoglutathione catabolism. Biochem. J. 356(3), 799-804 (2001).
- 4. Cheah, I.K. and Halliwell, B. Ergothioneine; antioxidant potential, physiological function and role in disease. Biochim. Biophys. Acta 1822, 784-793 (2012).
- Aruoma, O.I., Spencer, J.P.E., and Mahmood, N. Protection against oxidative damage and cell death by the 5. natural antioxidant ergothioneine. Food Chem. Toxicol. 37(11), 1043-1053 (1999).
- Nakamura, T., Yoshida, K., Yabuuchi, H., et al. Functional characterization of ergothioneine transport by 6. rat organic cation/carnitine transporter Octn1 (slc22a4). Biol. Pharm. Bull. 31(8), 1580-1584 (2008).

WARNING THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFFTY 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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