

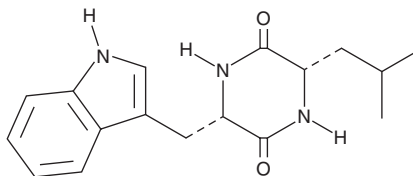
PRODUCT INFORMATION



Cyclo(L-Leu-L-Trp)

Item No. 24942

CAS Registry No.: 15136-34-2
Formal Name: 3S-(1H-indol-3-ylmethyl)-6S-(2-methylpropyl)-2,5-piperazinedione
MF: C₁₇H₂₁N₃O₂
FW: 299.4
Purity: ≥95%
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

Cyclo(L-Leu-L-Trp) is supplied as a solid. A stock solution may be made by dissolving the cyclo(L-Leu-L-Trp) in the solvent of choice, which should be purged with an inert gas.. Cyclo(L-Leu-L-Trp) is soluble in the organic solvent methanol

Description

Cyclo(L-Leu-L-Trp) is a diketopiperazine metabolite originally isolated from *Penicillium*.¹ It is active against various bacteria (MICs = 125-1000 µg/ml) and fungi (MICs = 8-64 µg/ml), and it inhibits the production rate of hydroxy radicals in an electron spin resonance (ESR) spectroscopy-based assay (IC₅₀ = 1.8 µM).^{2,3} Cyclo(L-Leu-L-Trp) is a bitter tastant that can rapidly permeate rat taste cell membranes *ex vivo* when used at a concentration of 1 mM.⁴ It also acts as a melatonin receptor agonist in *X. laevis* melanophores, inhibiting cAMP accumulation when used at a concentration of 20 µM, an effect that is blocked by the melatonin receptor antagonist luzindole (Item No. 15998).⁵

References

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2. Kumar, S.N., Mohandas, C., and Nambisan, B. Purification, structural elucidation and bioactivity of tryptophan containing diketopiperazines, from *Comamonas testosteroni* associated with a rhabditid entomopathogenic nematode against major human-pathogenic bacteria. *Peptides* **53(2014)**, 48-58 (2014).
3. Furukawa, T., Akutagawa, T., Funatani, H., *et al.* Cyclic dipeptides exhibit potency for scavenging radicals. *Bioorg. Med. Chem.* **20(6)**, 2002-2009 (2012).
4. Naim, M., Nir, S., Spielman, A.I., *et al.* Hypothesis of receptor-dependent and receptor-independent mechanisms for bitter and sweet taste transduction: Implications for slow taste onset and lingering aftertaste. *Chemistry of Taste* **825(Chapter 1)**, 2-17 (2002).
5. Zubare-Samuelov, M., Peri, I., Tal, M., *et al.* Some sweet and bitter tastants stimulate inhibitory pathway of adenylyl cyclase via melatonin and α₂-adrenergic receptors in *Xenopus laevis* melanophores. *Am. J. Physiol. Cell Physiol.* **285(5)**, C1255-62 (2003).

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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