

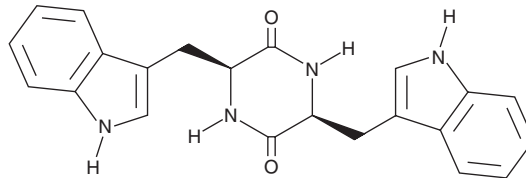
# PRODUCT INFORMATION



## Cyclo(L-Trp-L-Trp)

Item No. 23494

**CAS Registry No.:** 20829-55-4  
**Formal Name:** 3S,6S-bis(1H-indol-3-ylmethyl)-  
2,5-piperazinedione  
**Synonym:** Cyclic dioxopiperazine-L-  
tryptophan-L-tryptophan  
**MF:** C<sub>22</sub>H<sub>20</sub>N<sub>4</sub>O<sub>2</sub>  
**FW:** 372.4  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 221, 281, 291 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

Cyclo(L-Trp-L-Trp) is supplied as a crystalline solid. A stock solution may be made by dissolving the cyclo(L-Trp-L-Trp) in the solvent of choice, which should be purged with an inert gas. Cyclo(L-Trp-L-Trp) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of cyclo(L-Trp-L-Trp) in ethanol is approximately 5 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Cyclo(L-Trp-L-Trp) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, cyclo(L-Trp-L-Trp) should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Cyclo(L-Trp-L-Trp) has a solubility of approximately 0.1 mg/ml in a 1:10 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Cyclo(L-Trp-L-Trp) is a cyclic dipeptide that has been used as a substrate for indole prenyltransferases in the synthesis of mono- and diprenylated indoles.<sup>1,2</sup> It has antibacterial activity and inhibits growth of 41 out of 49 strains of multidrug resistant *A. baumannii* (MICs = 12.5-25 µg/ml) as well as *B. subtilis*, *M. luteus*, *S. aureus*, *S. cerevisiae*, *A. niger*, and *C. albicans* (MICs = 12.5-50 µg/ml).<sup>3</sup> Prenylated forms of cyclo(L-Trp-L-Trp) are cytotoxic against human leukemia and ovarian cell lines.<sup>4</sup>

### References

1. Yin, W.-B., Xie, X.-L., Matuschek, M., *et al.* Reconstruction of pyrrolo[2,3-b]indoles carrying an α-configured reverse C3-dimethylallyl moiety by using recombinant enzymes. *Org. Biomol. Chem.* **8**(5), 1133-1141 (2010).
2. Zou, H.-X., Xie, X.-L., Linne, U., *et al.* Simultaneous C7- and N1-prenylation of cyclo-L-Trp-L-Trp catalyzed by a prenyltransferase from *Aspergillus oryzae*. *Org. Biomol. Chem.* **8**(13), 3037-3044 (2010).
3. Lee, K.-H., Kim, K.-W., and Rhee, K.-H. Identification of *Streptomyces* sp. KH29, which produces an antibiotic substance processing an inhibitory activity against multidrug-resistant *Acinetobacter baumannii*. *J. Microbiol. Biotechnol.* **20**(12), 1672-1676 (2010).
4. Wollinsky, B., Ludwig, L., Hamacher, A., *et al.* Prenylation at the indole ring leads to a significant increase of cytotoxicity of tryptophan-containing cyclic dipeptides. *Bioorg. Med. Chem. Lett.* **22**(12), 3866-3869 (2012).

#### 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.

#### WARRANTY AND LIMITATION OF REMEDY

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