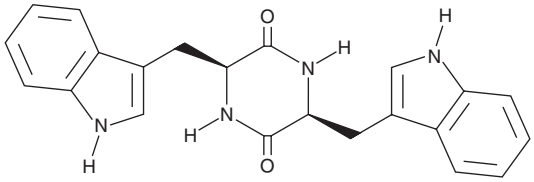
PRODUCT INFORMATION

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:	$C_{22}H_{20}N_4O_2$
FW:	372.4
Purity:	≥98%
UV/Vis.:	λ_{max}: 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 indolines.[1,2] 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).[3] Prenylated forms of cyclo(L-Trp-L-Trp) are cytotoxic against human leukemia and ovarian cell lines.[4]

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).

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