

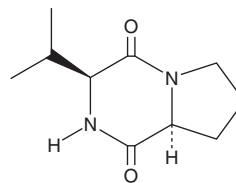
# PRODUCT INFORMATION



## Cyclo(L-Pro-L-Val)

Item No. 27961

<b>CAS Registry No.:</b>	2854-40-2
<b>Formal Name:</b>	(3S,8aS)-hexahydro-3-(1-methylethyl)-pyrrolo[1,2-a]pyrazine-1,4-dione
<b>Synonym:</b>	Cyclo(L-prolyl-L-valine)
<b>MF:</b>	C <sub>10</sub> H <sub>16</sub> N <sub>2</sub> O <sub>2</sub>
<b>FW:</b>	196.2
<b>Purity:</b>	≥95%
<b>Supplied as:</b>	A crystalline solid
<b>Storage:</b>	-20°C
<b>Stability:</b>	≥4 years
<b>Item Origin:</b>	Synthetic



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Cyclo(L-Pro-L-Val) is supplied as a crystalline solid. Aqueous solutions of cyclo(L-Pro-L-Val) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of cyclo(L-Pro-L-Val) in PBS, pH 7.2, is approximately 3 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Cyclo(L-Pro-L-Val) is a diketopiperazine that has been found in the marine sponge *T. ignis*, the bacterium *B. pumilus*, and the fungus *A. fumigatus*, among others.<sup>1-3</sup> It is active against the bacteria *S. aureus* and *B. subtilis* (MICs = 16.3 and 18.2 µg/ml, respectively) but not *E. coli* (MIC = >20 µg/ml).<sup>3</sup> Cyclo(L-Pro-L-Val) inhibits activation of a *LuxR*-dependent *E. coli* biosensor by the quorum-sensing molecule 3-oxo-hexanoyl-homoserine lactone (IC<sub>50</sub> = 0.4 mM) and activates violacein pigment production in the *LuxR*-dependent *C. violaceum* acyl homoserine lactone reporter strain CV026.<sup>4</sup> However, it does not activate or inhibit *lacZ*-based reporter fusions in *S. liquefaciens* or *A. tumefaciens*.

### References

- Schmitz, F.J., Vanderah, D.J., Hollenbeak, K.H., *et al.* Metabolites from the marine sponge *Tedania ignis*. A new atisanediol and several known diketopiperazines. *J. Org. Chem.* **48(22)**, 3941-3945 (1983).
- Brack, C., Mikolasch, A., and Schauer, F. 2,5-Diketopiperazines produced by *Bacillus pumilus* during bacteriolysis of *Arthrobacter citreus*. *Mar. Biotechnol. (NY)* **16(4)**, 385-395 (2014).
- El-Gendy, B.E.-D.M. and Rateb, M.E. Antibacterial activity of diketopiperazines isolated from a marine fungus using *t*-butoxycarbonyl group as a simple tool for purification. *Bioorg. Med. Chem. Lett.* **25(16)**, 3125-3128 (2015).
- Holden, M.T.G., Chhabra, S.R., de Nys, R., *et al.* Quorum-sensing cross talk: Isolation and chemical characterization of cyclic dipeptides from *Pseudomonas aeruginosa* and other gram-negative bacteria. *Mol. Microbiol.* **33(6)**, 1254-1266 (1999).

#### 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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