

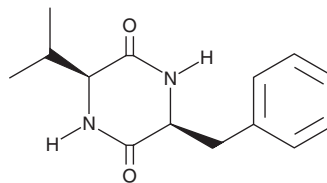
# PRODUCT INFORMATION



## Cyclo(L-Phe-L-Val)

Item No. 24943

**CAS Registry No.:** 35590-86-4  
**Formal Name:** 3S-(1-methylethyl)-6S-(phenylmethyl)-2,5-piperazinedione  
**Synonym:** DKP101516  
**MF:** C<sub>14</sub>H<sub>18</sub>N<sub>2</sub>O<sub>2</sub>  
**FW:** 246.3  
**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-Phe-L-Val) is supplied as a solid. A stock solution may be made by dissolving the cyclo(L-Phe-L-Val) in the solvent of choice. Cyclo(L-Phe-L-Val) is soluble in organic solvents such as ethanol, methanol, DMSO, and dimethyl formamide, which should be purged with an inert gas.

### Description

Cyclo(L-Phe-L-Val) is a metabolite of the sponge bacterium *Pseudoalteromonas* sp. NJ6-3-1 that can autoinduce production of antibacterial substances active against *S. aureus* when co-cultured at a low cell density.<sup>1</sup> It induces neurite outgrowth and branching of chick cortical neurons *in vitro* when used at concentrations of 16 and 32 μM.<sup>2</sup> It increases phosphorylation of the PI3K substrate Akt, and neurite outgrowth induced by cyclo(L-Phe-L-Val) can be blocked by the PI3K inhibitor LY294002 (Item No. 70920). Cyclo(L-Phe-L-Val) enhances axon sprouting of calcitonin gene-related protein positive (CGRP<sup>+</sup>) primary afferents in the spinal cord following crush injury and of serotonin neurons in uninjured spinal cord. Cyclo(L-Phe-L-Val) is also a bitter taste component of cocoa and roasted coffee.<sup>3</sup>

### References

1. Guo, X., Zheng, L., Zhou, W., *et al.* A case study on chemical defense based on quorum sensing: Antibacterial activity of sponge-associated bacterium *Pseudoalteromonas* sp. NJ6-3-1 induced by quorum sensing mechanisms. *Ann. Microbiol.* **61**(2), 247-255 (2011).
2. Wong, J.W., McPhail, L.T., Brastianos, H.C., *et al.* A novel diketopiperazine stimulates sprouting of spinally projecting axons. *Exp. Neurol.* **214**(2), 331-340 (2008).
3. Ginz, M. and Engelhardt, U.H. Identification of new diketopiperazines in roasted coffee. *Eur. Food Res. Technol.* **213**(1), 8-11 (2001).

#### 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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