

**Product Name:** cyclo(L-Pro-L-Tyr)

**Product Number:** C222

**CAS Number:** 4549-02-4

**Molecular Formula:**  $C_{14}H_{16}N_2O_3$

**Molecular Weight:** 260.3

**Description:** Cyclo(L-Pro-L-Tyr) (maculosin) is a diketopiperazine formed by the fusion of tyrosine and proline, reported as a secondary metabolite of fungi and bacteria. In *Pseudomonas aeruginosa*, cyclo(L-Pro-L-Tyr) is capable of activating N-acylhomoserine lactones (AHLs). Cyclo(L-Pro-L-Tyr) is also capable of activating or antagonizing other LuxR-based quorum-sensing systems. Cyclo(L-Pro-L-Tyr) was identified as a host-specific toxin produced by *Alternaria alternata* on spotted knapweed.

Cyclo(L-Pro-L-Tyr) is soluble in ethanol, methanol, DMF or DMSO. Limited water solubility.

**Mechanism of Action:** While the mode of action of cyclo(L-Pro-L-Tyr) is not known, its activity suggests the existence of cross talk among bacterial signalling systems.

**References:** Citromycetins and bilains A-C: new aromatic polyketides and diketopiperazines from Australian marinederived and terrestrial *Penicillium* spp. Capon R.J. et al. J. Nat. Prod. 2007, 70, 1746.

Quorum-sensing cross talk: isolation and chemical characterization of cyclic dipeptides from *Pseudomonas aeruginosa* and other Gram-negative bacteria. Holden, M.T.G. et al. Mol. Microbiol. 1999, 33, 1254.

Maculosin, a host-specific phytotoxin for spotted knapweed from *Alternaria alternata*. Stierle A.C. Proc. Natl. Acad. Sci. USA 1988, 85, 8008.