

## Beauvericin

Product Number **B7510**

Storage Temperature 2-8 °C

### Product Description

Molecular Formula: C<sub>45</sub>H<sub>57</sub>N<sub>3</sub>O<sub>9</sub>

Molecular Weight: 784.0

CAS Number: 26048-05-5

Melting Point: 93-94 °C<sup>1</sup>, 147-148 °C<sup>2</sup>

Specific Rotation: +69.0° (benzene)<sup>2</sup>

Beauvericin is an antibiotic that occurs naturally in the fungus *Beauveria bassiana*.<sup>1</sup> It is a member of the enniatin family of antibiotics and has activity against Gram-positive bacteria and mycobacteria, as well as against insects and brine shrimp. Beauvericin is a cyclic hexadepsipeptide with alternating L-N-methylphenylalanyl and D- $\alpha$ -hydroxyisovaleryl residues. Its ion-complexing capability allows beauvericin to transport alkaline earth metal and alkali metal ions across cell membranes.<sup>3,4</sup> A detailed review of beauvericin and other enniatins has been published.<sup>4</sup> The production of beauvericin and other mycotoxins by several *Fusarium* species has been studied by HPLC.<sup>5</sup>

Beauvericin has been shown to cause channel formation in patches of ventricular myocytes and synthetic membranes.<sup>6</sup> The cytotoxic effects of beauvericin (100-300  $\mu$ M) on the human myeloid cell lines U-937 and HL-60 has been studied.<sup>7</sup>

Beauvericin (0.3-100  $\mu$ M) has been shown to inhibit L-type voltage-dependent Ca<sup>2+</sup> current in the mouse neuroblastoma and rat glioma hybrid cell line NG108-15.<sup>8</sup>

### Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

### Preparation Instructions

This product is soluble in acetonitrile (1 mg/ml).

It is also soluble in methanol (1 mg/ml).

### References

1. Hamill, R. L., et al., The structure of beauvericin, a new depsipeptide antibiotic toxic to *Artemia salina*. *Tetrahedron Lett.*, **10(49)**, 4255-4258 (1969).
2. Ovchinnikov, Y. A., et al., The synthesis and some properties of beauvericin. *Tetrahedron Lett.*, **12(2)**, 159-162 (1971).
3. Braden, B., et al., Crystal structure of a beauvericin-barium picrate complex. *J. Am. Chem. Soc.*, **102(8)**, 2704-2709 (1980).
4. Steinrauf, L. K., "Beauvericin and the other enniatins", in *Metal Ions in Biological Systems*, **19**, Sigel, H., ed., Marcel Dekker (New York, NY: 1985), pp. 139-171.
5. Fotso, J., et al., Production of beauvericin, moniliformin, fusaproliferin, and fumonisins b<sub>1</sub>, b<sub>2</sub>, and b<sub>3</sub> by fifteen ex-type strains of *Fusarium* species. *Appl. Environ. Microbiol.*, **68(10)**, 5195-5197 (2002).
6. Kouri, K., et al., Beauvericin-induced channels in ventricular myocytes and liposomes. *Biochim. Biophys. Acta*, **1609(2)**, 203-210 (2003).
7. Calo, L., et al., Cytotoxic effects of the mycotoxin beauvericin to human cell lines of myeloid origin. *Pharmacol. Res.*, **49(1)**, 73-77 (2004).
8. Wu, S. N., et al., Block of L-type Ca<sup>2+</sup> current by beauvericin, a toxic cyclopeptide, in the NG108-15 neuronal cell line. *Chem. Res. Toxicol.*, **15(6)**, 854-860 (2002).

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