



Product Information

Anantin from *Streptomyces coeruleus*

Product Number **A 4316**
Storage Temperature -0 °C

Product Description

Molecular Formula: C₉₀H₁₁₁N₂₁O₂₄

Molecular Weight: 1,870

CAS Number: 133658-45-4

K_d = 0.61 μM^{1,2}

Synonym: Cyclo(Gly-Phe-Ile-Gly-Trp-Gly-Asn-β-Asp)-
Ile-Phe-Gly-His-Tyr-Ser-Gly-Asp-Ph

Anantin is a naturally occurring cyclic polypeptide obtained from the filamentous soil bacterium *Streptomyces coeruleus*. Anantin consists of 17 common L-amino acids. The primary amino acid sequence of anantin is:

Gly¹-Phe-Ile-Gly-Trp-Gly-Asn-Asp⁸-Ile-Phe-Gly-His-Tyr-Ser-Gly-Asp-Phe.

The molecule is cyclized by an amide link between the α-amino group of Gly¹ and the β-carboxyl group of Asp^{8,1,-3}.

Anantin can function as an antagonist of the peptide hormone atrial natriuretic factor (ANF), secreted predominantly by atrial myocytes. ANF exerts many of its actions by binding to a membrane bound receptor resulting in the activation of the receptor-linked, particulate-form of guanylyl cyclase. The activated particulate guanylyl cyclase catalyzes the formation of guanosine 3',5'-cyclic monophosphate (cGMP), which serves as a second messenger in the target cells. ANF does not appear to increase cGMP through activation of the soluble form of guanylyl cyclase. Anantin can inhibit ANF-induced intracellular cGMP accumulation by competitively binding the ANF-receptor without causing guanylyl cyclase activation.^{1,2,4}

Anantin has been used in studies of human stomach, human spermatozoa, bovine adrenal cortex, bovine aorta, bovine spermatozoa, cat iris, rabbit vas deferens, rat stomach, guinea pig myometrium, and amphibian heart.^{1,2, 4-12}

Precautions and Disclaimer

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

Preparation Instructions

This product is soluble in 50 mM acetic acid (1 mg/ml) and in 50% TFA (0.5 mg/ml), yielding a clear colorless solution.

References

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