

Certificate of Analysis

Product Name: α-Conotoxin MII

Catalog No.: 1340

Batch No.: 14

CAS Number: 175735-93-0

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula:	C ₆₇ H ₁₀₃ N ₂₃ O ₂₂ S ₄
Batch Molecular Weight:	1710.99
Physical Appearance:	White lyophilised solid
Counter Ion:	TFA
Solubility:	Soluble to 1 mg/ml in water
Storage:	Store at -20°C
Peptide Sequence:	<pre> ┌──────────────────────────┐ Gly-Cys-Cys-Ser-Asn-Pro-Val-Cys-His-Leu- │ │ └──────────────────────────┘ Glu-His-Ser-Asn-Leu-Cys-NH₂ </pre>

2. ANALYTICAL DATA

HPLC:	Shows 97.9% purity
Mass Spectrum:	Consistent with structure

3. AMINO ACID ANALYSIS DATA

Amino Acid Theoretical Actual			Amino Acid Theoretical Actual		
Ala			Lys		
Arg			Met		
Asx	2.00	2.02	Phe		
Cys	4.00	Detected	Pro	1.00	1.02
Glx	1.00	1.01	Ser	2.00	2.01
Gly	1.00	1.00	Thr		
His	2.00	2.00	Trp		
Ile			Tyr		
Leu	2.00	1.97	Val	1.00	0.97

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Description:

α -Conotoxin MII is a highly potent and selective competitive antagonist for $\alpha 3\beta 2$ subunit-containing nicotinic receptors (IC_{50} = 0.5 - 3.5 nM at $\alpha 3\beta 2$ expressed in *Xenopus* oocytes). Also potently blocks $\beta 3$ -containing neuronal nicotinic receptors. Displays > 200-fold selectivity for $\alpha 3\beta 2$ over $\alpha 2\beta 2$, $\alpha 4\beta 2$ and $\alpha 3\beta 4$.

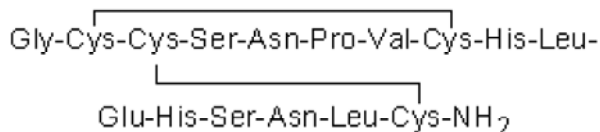
Physical and Chemical Properties:

Batch Molecular Formula: $C_{67}H_{103}N_{23}O_{22}S_4$

Batch Molecular Weight: 1710.99

Physical Appearance: White lyophilised solid

Peptide Sequence:



Storage: Store at -20°C

Solubility & Usage Info:

Soluble to 1 mg/ml in water

This product is supplied as a lyophilized solid and may be very hard to visualize. Solutions should be made by adding solvent directly to the vial. The vial should then be vortexed vigorously to ensure the product has completely dissolved.

Counter Ion: TFA

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Peptides in solution are much less stable than in lyophilized form. This is especially true for peptides whose sequences contain amino acids such as Cys, Met, Trp, Asn, Gln, and N-terminal Glu.

Therefore we recommend storing peptides in solution for as short a time as possible. Avoid repeated freeze thaw cycles by dividing the peptide solution into aliquots and storing the aliquots at -20°C. Any portion of an aliquot unused after thawing should be discarded.

Peptides stored in solution can occasionally be susceptible to bacterial degradation. We recommend using sterile solutions or passing the peptide solution through a 0.2 μ m filter to remove potential bacterial contamination whenever possible.

Other Information:

This is a dual-use item with associated conditions of supply; the relevant licence/documentation from the appropriate governing body will be required.

Licensing Information:

Sold under license from the University of Utah.

References:

David et al (2010) Biochemical and functional properties of distinct nicotinic acetylcholine receptors in the superior cervical ganglion of mice with targeted deletions of nAChR subunit genes. *Eur.J.Neurosci.* **31** 978. PMID: 20377613.

McIntosh et al (2000) *Conus* peptides: novel probes for nicotinic acetylcholine receptor structure and function. *Eur.J.Pharmacol.* **393** 205. PMID: 10771014.

Harvey et al (1997) Determinants of specificity for α -conotoxin MII on $\alpha 3\beta 2$ neuronal nicotinic receptors. *Mol.Pharmacol.* **51** 336. PMID: 9203640.

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