

# PRODUCT INFORMATION



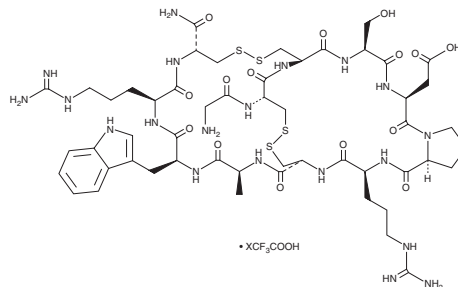
## $\alpha$ -Conotoxin Iml (trifluoroacetate salt)

Item No. 34022

**Formal Name:** glycyl-L-cysteinyl-L-cysteinyl-L-seryl-L- $\alpha$ -aspartyl-L-prolyl-L-arginyl-L-cysteinyl-L-alanyl-L-tryptophyl-L-arginyl-L-cysteinamide, cyclic (2 $\rightarrow$ 8),(3 $\rightarrow$ 12)-bis(disulfide), trifluoroacetate salt

**Synonyms:**  $\alpha$ -CTx Iml, GCCSDPRCAWRC  
**MF:**  $C_{52}H_{78}N_{20}O_{15}S_4 \cdot XCF_3COOH$   
**FW:** 1,351.6

**Purity:**  $\geq 98\%$   
**Supplied as:** A solid  
**Storage:**  $-20^\circ C$   
**Stability:**  $\geq 4$  years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

$\alpha$ -Conotoxin Iml (trifluoroacetate salt) is supplied as a solid. A stock solution may be made by dissolving the  $\alpha$ -conotoxin Iml (trifluoroacetate salt) in water. We do not recommend storing the aqueous solution for more than one day.

### Description

$\alpha$ -Conotoxin Iml is a conotoxin that has been found in *C. imperialis* and has receptor antagonist and anticancer activities.<sup>1</sup> It is a peptide antagonist of homomeric  $\alpha 7$  nicotinic acetylcholine receptors (nAChRs;  $IC_{50} = 220$  nM).  $\alpha$ -Conotoxin Iml is selective for  $\alpha 7$  nAChRs over  $\alpha 2\beta 2$ ,  $\alpha 3\beta 2$ ,  $\alpha 4\beta 2$ ,  $\alpha 2\beta 4$ ,  $\alpha 3\beta 4$ ,  $\alpha 4\beta 4$ , and  $\alpha 1\beta 1\gamma \delta$  subunit-containing nAChRs at 5  $\mu M$  but does inhibit homomeric  $\alpha 9$  nAChRs ( $IC_{50} = 1,800$  nM). Administration of paclitaxel (Item No. 10461) in micelles containing  $\alpha$ -conotoxin Iml decreases tumor growth in an MCF-7 mouse xenograft model.<sup>2</sup> Intracerebroventricular, but not intraperitoneal, administration of  $\alpha$ -conotoxin Iml (20 nmol/animal) induces seizures in rats.<sup>3</sup>

### References

1. Johnson, D.S., Martinez, J., Elgoyhen, A.B., *et al.*  $\alpha$ -Conotoxin Iml exhibits subtype-specific nicotinic acetylcholine receptor blockade: Preferential inhibition of homomeric  $\alpha 7$  and  $\alpha 9$  receptors. *Mol. Pharmacol.* **48**(2), 194-199 (1995).
2. Mei, D., Lin, Z., Fu, J., *et al.* The use of  $\alpha$ -conotoxin Iml to actualize the targeted delivery of paclitaxel micelles to  $\alpha 7$  nAChR-overexpressing breast cancer. *Biomaterials* **42**, 52-65 (2015).
3. McIntosh, J.M., Yoshikami, D., Mahe, E., *et al.* A nicotinic acetylcholine receptor ligand of unique specificity,  $\alpha$ -conotoxin Iml. *J. Biol. Chem.* **269**(24), 16733-16739 (1994).

#### 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.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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