



# SZABO SCANDIC

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### Lieferung & Zahlungsart

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### Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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## $\alpha$ -Conotoxin Vc1.1 TFA

<b>Cat. No.:</b>	HY-125777A		
<b>Molecular Formula:</b>	C <sub>73</sub> H <sub>104</sub> F <sub>3</sub> N <sub>23</sub> O <sub>27</sub> S <sub>4</sub>		
<b>Molecular Weight:</b>	1921		
<b>Sequence:</b>	Gly-Cys-Cys-Ser-Asp-Pro-Arg-Cys-Asn-Tyr-Asp-His-Pro-Glu-Ile-Cys-NH <sub>2</sub> (Disulfide bridge: Cys2-Cys8; Cys3-Cys16) <small>GCCSDPRCNYDHPEIC-NH<sub>2</sub> (Disulfide bridge: Cys<sub>2</sub>-Cys<sub>8</sub>; Cys<sub>3</sub>-Cys<sub>16</sub>) (TFA salt)</small>		
<b>Sequence Shortening:</b>	GCCSDPRCNYDHPEIC-NH <sub>2</sub> (Disulfide bridge: Cys2-Cys8; Cys3-Cys16)		
<b>Target:</b>	nAChR		
<b>Pathway:</b>	Membrane Transporter/Ion Channel; Neuronal Signaling		
<b>Storage:</b>	Sealed storage, away from moisture		
	Powder	-80°C	2 years
		-20°C	1 year
	* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)		

### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : 100 mg/mL (52.06 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	0.5206 mL	2.6028 mL	5.2056 mL
	5 mM	0.1041 mL	0.5206 mL	1.0411 mL
	10 mM	0.0521 mL	0.2603 mL	0.5206 mL

Please refer to the solubility information to select the appropriate solvent.

### BIOLOGICAL ACTIVITY

#### Description

$\alpha$ -Conotoxin Vc1.1 TFA is a disulfide-bonded peptide isolated from *Conus victoriae* and is a selective nAChR antagonist.  $\alpha$ -Conotoxin Vc1.1 TFA inhibits  $\alpha 3\alpha 5\beta 2$ ,  $\alpha 3\beta 2$  and  $\alpha 3\beta 4$  with IC<sub>50</sub>s of 7.2  $\mu$ M, 7.3  $\mu$ M and 4.2  $\mu$ M, respectively, and has less inhibitory effect on other nAChR subtypes.  $\alpha$ -Conotoxin Vc1.1 TFA has the potential for neuropathic pain research<sup>[1][2]</sup>.

#### IC<sub>50</sub> & Target

IC<sub>50</sub>: 7.2  $\mu$ M ( $\alpha 3\alpha 5\beta 2$ ), 7.3  $\mu$ M ( $\alpha 3\beta 2$ ) and 4.2  $\mu$ M ( $\alpha 3\beta 4$ )<sup>[1]</sup>

#### In Vitro

The  $\alpha$ -Conotoxin Vc1.1 is first discovered using a PCR screen of cDNAs from the venom ducts of *Conus victoriae*.  $\alpha$ -Conotoxin Vc1.1 inhibits nicotine-evoked membrane currents in isolated bovine chromaffin cells in a concentration-dependent manner and preferentially targets peripheral nAChR subtypes over central subtypes. The three-dimensional structure of Vc1.1 comprises a small alpha-helix spanning residues Pro6 to Asp11 and is braced by the I-III, II-IV disulfide connectivity seen in other alpha-conotoxins. The cysteine spacing within the sequence of  $\alpha$ -Conotoxin Vc1.1 suggests that it is a member of the 4/7 subclass of  $\alpha$ -conotoxins, which includes the extensively studied conotoxins MII, Epl and PnIB<sup>[1]</sup>.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

**In Vivo**

$\alpha$ -Conotoxin Vc1.1 (0.18-18  $\mu\text{g}/\mu\text{L}$ ; intramuscular injection; daily; for 7 days; male Sprague-Dawley rats) treatment suppresses pain behaviors and also accelerates functional recovery of injured neurons in CCI rats<sup>[1]</sup>.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Outbred male Sprague-Dawley rats (3-4 months old; 250-350 g) bearing with chronic constriction injury (CCI) <sup>[1]</sup>
Dosage:	0.18 $\mu\text{g}/\mu\text{L}$ , 1.8 $\mu\text{g}/\mu\text{L}$ or 18 $\mu\text{g}/\mu\text{L}$
Administration:	Intramuscular injection; daily; for 7 days
Result:	Suppressed pain behaviors and also accelerates functional recovery of injured neurones.

**REFERENCES**

- [1]. Richard J Clark, et al. The Synthesis, Structural Characterization, and Receptor Specificity of the Alpha-Conotoxin Vc1.1. J Biol Chem. 2006 Aug 11;281(32):23254-63.
- [2]. Narmatha Satkunanathan, et al. Alpha-conotoxin Vc1.1 Alleviates Neuropathic Pain and Accelerates Functional Recovery of Injured Neurones. Brain Res. 2005 Oct 19;1059(2):149-58.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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