# **PRODUCT** INFORMATION



## Ziconotide (trifluoroacetate salt)

Item No. 23913

CAS Registry No.:	1660960-77-9	
Formal Name:	L-cysteinyl-L-lysylglycyl-L-lysylglycyl-L-alanyl-	
	L-lysyl-L-cysteinyl-L-seryl-L-arginyl-L-leucyl-L-	
	methionyl-L-tyrosyl-L-α-aspartyl-L-cysteinyl-L-	
	cysteinyl-L-threonylglycyl-L-seryl-L-cysteinyl-	
	L-arginyl-L-serylglycyl-L-lysyl-L-cysteinamide,	H-Cys-Lys-Gly-Lys-Gly-Ala-Lys-Cys-Ser-Arg-
	cyclic (1 $\rightarrow$ 16),(8 $\rightarrow$ 20),(15 $\rightarrow$ 25)- <i>tris</i> (disulfide),	Leu-Met-Tyr-Asp-Cys-Cys-Thr-Gly-Ser-Cys-
	trifluoroacetate salt	
Synonyms:	ω-Conotoxin MVIIA, SNX-111	Arg—Ser—Gry—Lys—Cys—INH <sub>2</sub>
MF:	C <sub>102</sub> H <sub>172</sub> N <sub>36</sub> O <sub>32</sub> S <sub>7</sub> • XCF <sub>3</sub> COOH	• XCF <sub>3</sub> COOH
FW:	2,639.1	
Purity:	≥95%	
Supplied as:	A lyophilized powder	
Storage:	-20°C	
Stability:	≥4 years	

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

#### Laboratory Procedures

Ziconotide (trifluoroacetate salt) is supplied as a lyophilized powder. A stock solution may be made by dissolving the ziconotide (trifluoroacetate salt) in water. The solubility of ziconotide (trifluoroacetate salt) in water is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

#### Description

Ziconotide is a synthetic version of  $\omega$ -conopeptide MVIIA, a peptide toxin originally found in the venom of the fish-eating marine snail C. magus, that blocks N-type calcium channels in rat brain membranes  $(K_{ds} = 1.1-18 \text{ pM}; \text{ IC}_{50}\text{s} = 2-55 \text{ pM})^{1.2}$  It blocks high-voltage-activated calcium currents in rat superior cervical ganglion neurons (IC<sub>50</sub> = 32 nM) as well as depolarization-induced norepinephrine release by rat peripheral sympathetic efferent neurons and in rat hippocampus (IC<sub>50</sub>s = 1.2 and 5.5 nM, respectively).<sup>1</sup> Intrathecal administration of ziconotide inhibits formalin-induced flinch responses and increases the paw withdrawal threshold in the paw pressure test in rats (ED<sub>50</sub>s = 0.11 and 0.60  $\mu$ g, respectively), indicating antinociceptive effects.<sup>3</sup> It decreases latency to tail withdrawal in a hot plate test in a rat model of sciatic chronic constriction injury.<sup>1</sup> Ziconotide also reduces infarct volume post ischemia in a rat model of transient focal ischemia.4

#### References

- 1. McGivern, J.G. Ziconotide: A review of its pharmacology and use in the treatment of pain. Neurophyschiatr. Dis. Treat. 3(1), 69-85 (2007).
- 2. Olivera, B.M., Cruz, L.J., de Santos, V., et al. Neuronal calcium channel antagonists. Discrimination between calcium channel subtypes using  $\omega$ -conotoxin from Conus magus venom. Biochemistry 26(8), 2086-2090 (1987).
- 3. Wang, Y.X., Gao, D., Pettus, M., et al. Interactions of intrathecally administered ziconotide, a selective blocker of neuronal N-type voltage-sensitive calcium channels, with morphine on nociception in rats. Pain 84(2-3), 271-281 (2000).
- 4. Zhao, Q., Smith, M.L., and Siesjö, B.K. The omega-conopeptide SNX-111, an N-type calcium channel blocker, dramatically ameliorates brain damage due to transient focal ischaemia. Acta. Physiol. Scand. 150(4), 459-461 (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

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