Ziconotide acetate

Cat. No.: HY-P0062B

CAS No.: 914454-03-8

Molecular Formula: $C_{104}H_{176}N_{36}O_{34}S_7$

Sequence: Cys-Lys-Gly-Lys-Gly-Ala-Lys-Cys-Ser-Arg-Leu-Met-Tyr-Asp-Cys-Cys-Thr-Gly-Ser-Cys-Arg-Ser-Gly-Lys-Cys-NH2 (Disulfide bridge:Cys1-Cys16;Cys8-Cys20;Cys15-Cys25)

Sequence Shortening: CKGKGAKCSRLMYDCCTGSCRSGKC-NH2 (Disulfide bridge:Cys1-Cys16;Cys8-Cys20;Cys15-Cys25)

Target: Calcium Channel

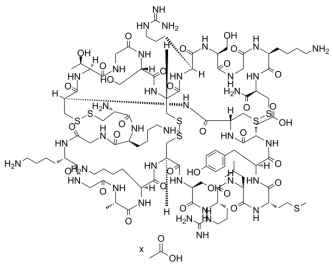
Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling

Storage: Sealed storage, away from moisture and light, under nitrogen

Powder -80°C 2 years

-20°C 1 year

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light, under nitrogen)



SOLVENT & SOLUBILITY

In Vitro	H_2O : 100 mg/mL (Need ultrasonic) DMSO : 25 mg/mL (Need ultrasonic)
In Vivo	1. Add each solvent one by one: PBS Solubility: 50 mg/mL (Infinity mM); Clear solution; Need ultrasonic 2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (Infinity mM); Clear solution 3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (Infinity mM); Clear solution 4. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (Infinity mM); Clear solution

BIOLOGICAL ACTIVITY

Description	Ziconotide acetate (SNX-111 acetate), a peptide, is a potent and selective block of N-type calcium channels antagonist. Ziconotide acetate reduces synaptic transmission, and can be used for chronic pain research[1].
IC_{50} & Target	N-type calcium channel
In Vitro	Most native cells express a variety of different calcium channels and as a result, Ziconotide acetate only partially reduces high-voltage-activated calcium currents in differentiated human neuroblastoma IMR32 cells, rat superior cervical ganglion neurons, and rat hippocampal neurons. Ziconotide acetate also reduces calcium currents that result from expression of the α1B subunit in HEK cells, tsa-201 cells, and Xenopus laevis oocytes[1]. Ziconotide acetate delivers its antinociceptive efficacy by reducing the release of pronociceptive neurotransmitters in the

	dorsal horn of the spinal cord, thereby inhibiting pain signal transmission[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Ziconotide (i.t.; 25-100 pmol/site; 5 μL; on the 4 th, 10 th, 15 th, 20 th, and 24 th days) acetate reduces the levels of IL-1β and IL-23 in the CNS, as well as IL-17 production in the spleen, 25 days after MOG35-55-elicited EAE, in the mouse model of experimental autoimmune encephalomyelitis (EAE)[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Female C57BL/6mice (18-22 g, 6-8 weeks old) injected with myelin oligodendrocytes glycoprotein[2]
Dosage:	25 pmol/site, 50 pmol/site, 100 pmol/site
Administration:	Intrathecal injection; on the 4 th, 10 th, 15 th, 20 th, and 24 th days
Result:	Significantly reduced the mechanical hypersensitivity in animals with EAE.

REFERENCES

[1]. Joseph G McGivern, et al. Ziconotide: a review of its pharmacology and use in the treatment of pain. Neuropsychiatr Dis Treat. 2007 Feb;3(1):69-85.

[2]. Rodrigo B M Silva, et al. Beneficial Effects of the Calcium Channel Blocker CTK 01512-2 in a Mouse Model of Multiple Sclerosis. Mol Neurobiol. 2018 Dec;55(12):9307-9327.

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