Product Datasheet

Purotoxin-1

Product name : Purotoxin 1	**Synonyms :** PT-1
Catalog # : 011PUR001	

Product description

Purotoxin1 (PT-1) is a peptide originally isolated from the Central Asian spider Geolycosa *sp.* It was shown to inhibit selectively P2X3 receptor channels at a 100 nM concentration. Studies were carried-out on cultured rat DRG neurons. Patch-clamp experiments did not show any inhibitory effect of PT-1 on voltage-gated channels (potentials range tested from -100 to 20 mV), neither on TRPV1 (after activation with 500 nM capsaicin). The selectivity of PT-1 for P2X3 was highlighted by activating this receptor with 10 µM ATP and 100 µM α, β Methylene-ATP. Indeed, unlike P2X3, P2X2 and heterodimer P2X2/3 are known to be not sensitive to such concentrations. Moreover, P2X3, P2X2, and P2X2/3 are the only known ATP-sensitive receptors expressed in plasma membranes of DRG neurons. So, the observed effect seems to be well related to a selective inhibition of P2X3. P2X3-mediated current was fully inhibited with 100 nM PT-1, making it the most potent and selective ligand for P2X3.

Product specifications

AA sequence: Gly-Tyr-Cys^{3}-Ala-Glu-Lys-Gly-Ile-Arg-Cys^{10}-Asp-Asp-Ile-His-Cys^{15}-Cys^{16}-Thr-Gly-Leu-Lys-Cys^{21}-Lys-Cys^{23}-Asn-Ala-Ser-Gly-Tyr-Asn-Cys^{30}-Val-Cys^{32}-Arg-Lys-Lys-NH_2
Disulfide bonds: Cys^{3}-Cys^{16}; Cys^{10}-Cys^{21}; Cys^{15}-Cys^{32}; Cys^{23}-Cys^{30}
Length (aa): 35
Formula: $C_{155}H_{248}N_{51}O_{47}S_8$
Appearance: White lyophilized solid
Molecular Weight: 3834.59 Da
CAS number:
Source: Synthetic
Counterion: TFA salts
Solubility: Water or saline buffer, 5 mg/mL maximum (recommendation)

Formulation

Storage/Stability: Shipped at ambient temperature under lyophilized powder. Store at -20°C (-4°F). Do not freeze-thaw. Aliquot sample if required and store at -80°C (-112°F).
Expiry date: One year
Use restrictions: For laboratory use only. Not for drug, household or other uses. Not for use in diagnostic or therapeutic procedures.

References

- Kabanova NV, et al. (2012) Modulation of P2X3 receptors by spider toxins. Biochim Biophys Acta.
- G. A. Savchenko, et al. (2010) Purinergic Membrane Receptors as Targets for the Effect of Purotoxin 1, a Component of Venom of Spiders from the Geolycosa Genus. Neurophysiology.
- E.V. Grishin, et al. (2010) Novel peptide from spider venom inhibits P2X3 receptors and inflammatory pain. ANN NEUROL

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