

Certificate of Analysis

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Product Name: Psalmotoxin 1

Catalog No.: 5042

Batch No.: 10

CAS Number: 316808-68-1

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₂₀₀H₃₁₂N₆₂O₅₇S₆
Batch Molecular Weight: 4689.41
Physical Appearance: White solid
Counter Ion: TFA
Solubility: Soluble to 2 mg/ml in water
Storage: Store at -20°C
Peptide Sequence:

Glu-Asp-Cys-Ile-Pro-Lys-Trp-Lys-Gly-Cys-
Val-Asn-Arg-His-Gly-Asp-Cys-Cys-Glu-Gly-
Leu-Glu-Cys-Trp-Lys-Arg-Arg-Arg-Ser-Phe-
Glu-Val-Cys-Val-Pro-Lys-Thr-Pro-Lys-Thr

2. ANALYTICAL DATA

HPLC: Shows 97.3% purity
Mass Spectrum: Consistent with structure

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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Description:

Psalmotoxin 1 is a potent and selective acid-sensing ion channel 1a (ASIC1a) blocker ($IC_{50} = 0.9 \text{ nM}$). Displays no effect at ASIC1b, ASIC2a, ASIC3, heteromeric ASIC channels, ENaC and $K_{v2.1/2.2/4.2/4.3}$ channels expressed in oocytes, at concentrations up to 100 nM. Displays potent analgesic properties against thermal, mechanical, chemical, inflammatory and neuropathic pain in rodents.

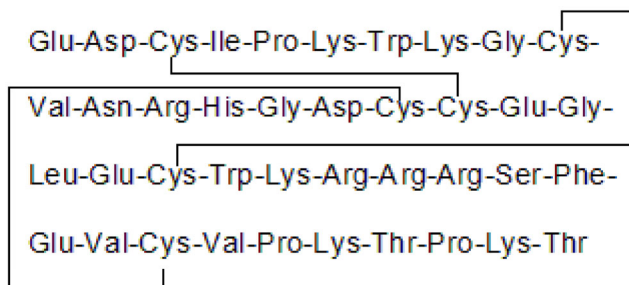
Physical and Chemical Properties:

Batch Molecular Formula: $C_{200}H_{312}N_{62}O_{57}S_6$

Batch Molecular Weight: 4689.41

Physical Appearance: White solid

Peptide Sequence:



Storage: Store at -20°C

Solubility & Usage Info:

Soluble to 2 mg/ml in water

This product is supplied in lyophilized form. It may appear as a solid, gel or film and be very hard to visualize. Solutions should be made by adding solvent directly to the vial. The vial should then be vortexed vigorously to ensure the product has completely dissolved.

Counter Ion: TFA

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a $45\text{--}60^{\circ}\text{C}$ water bath).

Peptides in solution are much less stable than in lyophilized form. This is especially true for peptides whose sequences contain amino acids such as Cys, Met, Trp, Asn, Gln, and N-terminal Glu.

Therefore we recommend storing peptides in solution for as short a time as possible. Avoid repeated freeze thaw cycles by dividing the peptide solution into aliquots and storing the aliquots at -20°C . Any portion of an aliquot unused after thawing should be discarded.

Peptides stored in solution can occasionally be susceptible to bacterial degradation. We recommend using sterile solutions or passing the peptide solution through a $0.2 \mu\text{m}$ filter to remove potential bacterial contamination whenever possible.

References:

Mazzuca et al (2007) A tarantula peptide against pain via ASIC1a channels and opioid mechanisms. *Nat.Neurosci.* **10** 943. PMID: 17632507.

Salinas et al (2006) The receptor site of the spider toxin PcTx1 on the proton-gated cation channel ASIC1a. *J.Physiol.* **570** 339. PMID: 16284080.

Escoubas et al (2003) Recombinant production and solution structure of PcTx1, the specific peptide inhibitor of ASIC1a proton-gated cation channels. *Protein Sci.* **12** 1332. PMID: 12824480.

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