

Certificate of Analysis

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Product Name: GsMTx4

Catalog No.: 4912

Batch No.: 19

CAS Number: 1209500-46-8

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₁₈₅H₂₇₃N₄₉O₄₅S₆
Batch Molecular Weight: 4095.86
Physical Appearance: White solid
Counter Ion: TFA
Solubility: Soluble to 1 mg/ml in water
Storage: Store at -20°C
Peptide Sequence:

```

      |_____|
Gly-Cys-Leu-Glu-Phe-Trp-Trp-Lys-Cys-Asn-
|_____|
Pro-Asn-Asp-Asp-Lys-Cys-Cys-Arg-Pro-Lys-
|_____|
Leu-Lys-Cys-Ser-Lys-Leu-Phe-Lys-Leu-Cys-
      |_____|
      Asn-Phe-Ser-Phe-NH2
  
```

2. ANALYTICAL DATA

HPLC: Shows 97.0% purity
Mass Spectrum: Consistent with structure

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

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Description:

GsMTx4 is a spider venom peptide that selectively inhibits cationic mechanosensitive channels (MSCs) such as TRPC1 and TRPC6 and Piezo channels. GsMTx4 blocks stretch-activated cation channels in astrocytes, cardiac cells, and smooth and skeletal muscle cells. GsMTx4 also inhibits TACAN, a mechanosensitive ion channel involved in the pain response. GsMTx4 decreases the leptin-induced AMPK and MLC-2 phosphorylation in breast epithelial cells. GsMTx4 is neuroprotective and inhibits lysophosphatidylcholine-induced astrocyte toxicity in vivo in mice. GsMTx4 suppresses neurogenesis and enhances astrogenesis in human neural stem cells.

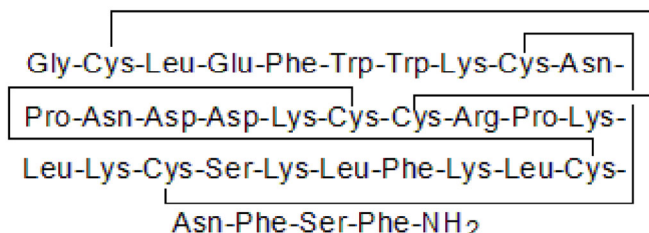
Physical and Chemical Properties:

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Batch Molecular Weight: 4095.86

Physical Appearance: White solid

Peptide Sequence:



Storage: Store at -20°C

Solubility & Usage Info:

Soluble to 1 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 45-60°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 µm filter to remove potential bacterial contamination whenever possible.

Licensing Information:

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References:

Acheva et al (2021) Adipokine leptin co-operates with mechanosensitive Ca²⁺-Channels and triggers actomyosin-mediated motility of breast epithelial cells. *Front.Cell.Dev.Biol.* **8** 607038. PMID: 33490070.

Velasco-Estevez et al (2020) Inhibition of Piezo1 attenuates demyelination in the central nervous system. *Glia* **68** 356. PMID: 31596529.

Beaulieu-Laroche et al (2020) TACAN is an ion channel involved in sensing mechanical pain. *Cell* **180** 956. PMID: 32084332.

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