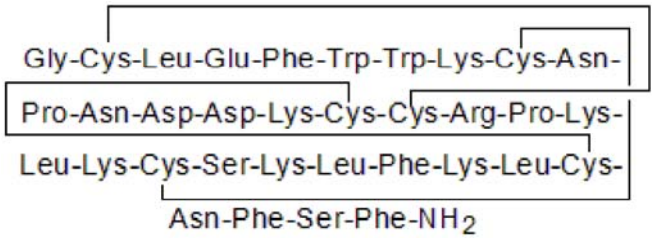
Print Date: Sep 22nd 2022

Certificate of Analysis

www.tocris.com

Product Name: GsMTx4 **Catalog No.:** 4912 **Batch No.:** 15

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula:	$C_{185}H_{273}N_{49}O_{45}S_6$
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:	

2. ANALYTICAL DATA

HPLC:	Shows 98.7% purity
Mass Spectrum:	Consistent with structure

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Product Name: GsMTx4 **Catalog No.: 4912** **15**

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.

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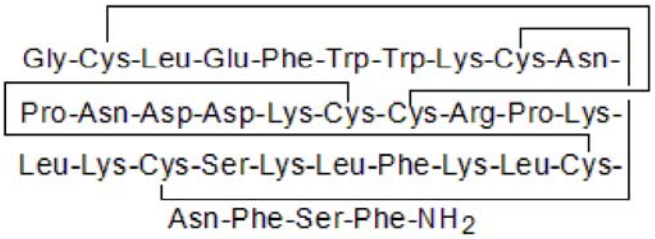

Storage: Store at -20°C

Solubility & Usage Info:

Soluble to 1 mg/ml in water

This product is supplied as a lyophilized solid and may 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 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 Ca^{2+}-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.