

Certificate of Analysis

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Product Name: ω-Agatoxin TK

Catalog No.: 2802

Batch No.: 3

CAS Number: 158484-42-5

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₂₁₅H₃₃₇N₆₅O₇₀S₁₀

Batch Molecular Weight: 5273.02

Physical Appearance: White lyophilised solid

Net Peptide Content: 100%

Solubility: Soluble in water

Storage: Desiccate at -20°C

Peptide Sequence:

```

Glu-Asp-Asn-Cys-Ile-Ala-Glu-Asp-Tyr-Gly-Lys-
      |-----|
Cys-Thr-Trp-Gly-Gly-Thr-Lys-Cys-Cys-Arg-Gly-
      |-----|
Arg-Pro-Cys-Arg-Cys-Ser-Met-Ile-Gly-Thr-Asn-
      |-----|
Cys-Glu-Cys-Thr-Pro-Arg-Leu-Ile-Met-Glu-Gly-
      |-----|
Leu-Ser-Phe-Ala
    
```

2. ANALYTICAL DATA

HPLC: Shows >99% purity

3. AMINO ACID ANALYSIS DATA

| Amino Acid Theoretical | | Actual | | Amino Acid Theoretical | | Actual | |
|------------------------|------|--------|-----|------------------------|------|--------|--|
| Ala | 2.00 | 2.19 | Lys | 2.00 | 2.00 | | |
| Arg | 4.00 | 3.99 | Met | 2.00 | 1.98 | | |
| Asx | 4.00 | 4.10 | Phe | 1.00 | 1.00 | | |
| Cys | 8.00 | 7.75 | Pro | 2.00 | 1.97 | | |
| Glx | 4.00 | 3.90 | Ser | 2.00 | 1.79 | | |
| Gly | 6.00 | 6.03 | Thr | 4.00 | 3.83 | | |
| His | | | Trp | 1.00 | 0.82 | | |
| Ile | 3.00 | 2.85 | Tyr | 1.00 | 0.98 | | |
| Leu | 2.00 | 2.00 | Val | | | | |

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

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Description:

Selective blocker of Ca_v2.1 P/Q-type calcium channels.

Physical and Chemical Properties:

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Peptide Sequence:

Glu-Asp-Asn-Cys-Ile-Ala-Glu-Asp-Tyr-Gly-Lys-

Cys-Thr-Trp-Gly-Gly-Thr-Lys-Cys-Cys-Arg-Gly-

Arg-Pro-Cys-Arg-Cys-Ser-Met-Ile-Gly-Thr-Asn-

Cys-Glu-Cys-Thr-Pro-Arg-Leu-Ile-Met-Glu-Gly-

Leu-Ser-Phe-Ala

Storage: Desiccate at -20°C

Solubility & Usage Info:

Soluble 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.

Net Peptide Content: 100% (Remaining weight made up of counterions and residual water).

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.

References:

Barral et al (2001) High-affinity inhibition of glutamate release from corticostriatal synapses by ω-agatoxin TK. *Eur.J.Pharmacol.* **430** 167. PMID: 11711028.

Teramoto et al (1997) A novel type of calcium channel sensitive to ω-agatoxin-TK in cultured rat cerebral cortical neurons. *Brain Res.* **756** 225. PMID: 9187336.

Teramoto et al (1993) A novel peptide from funnel web spider venom, ω-Aga-TK, selectively blocks P-type calcium channels. *Biochem.Biophys.Res.Comms.* **196** 134.

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