

Certificate of Analysis

Product Name: Mambalgin 1

Catalog No.: 5938

Batch No.: 1

CAS Number: 1609937-15-6

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₂₇₂H₄₂₉N₈₅O₈₄S₁₀
Batch Molecular Weight: 6554.51
Physical Appearance: White lyophilised solid
Counter Ion: TFA
Solubility: Soluble to 1 mg/ml in water
Storage: Store at -20°C
Peptide Sequence:

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

2. ANALYTICAL DATA

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

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

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Description:

Selective ASIC1a inhibitor (IC₅₀ values are 192 and 72 nM for human ASIC1a and ASIC1a/1b dimer, respectively). Binds to closed/inactive channel. Selective for ASIC1a over ASIC2a, ASIC3, TRPV1, P2X₂, 5-HT₃, Na_v1.8, Ca_v3.2 and K_v1.2 channels. Increases latency of withdrawal response in mouse tail-flick and paw-flick tests. Analgesic.

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Thr-Cys-His-Arg-Asp-Met-Lys-Phe-Cys-Tyr-

His-Asn-Thr-Gly-Met-Pro-Phe-Arg-Asn-Leu-

Lys-Leu-Ile-Leu-Gln-Gly-Cys-Ser-Ser-Ser-

Cys-Ser-Glu-Thr-Glu-Asn-Asn-Lys-Cys-Cys-

Ser-Thr-Asp-Arg-Cys-Asn-Lys

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 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:

Diochot et al (2012) Black mamba venom peptides target acid-sensing ion channels to abolish pain. *Nature* **490** 552. PMID: 23034652.

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