

## Certificate of Analysis

**Product Name:** Huwentoxin IV

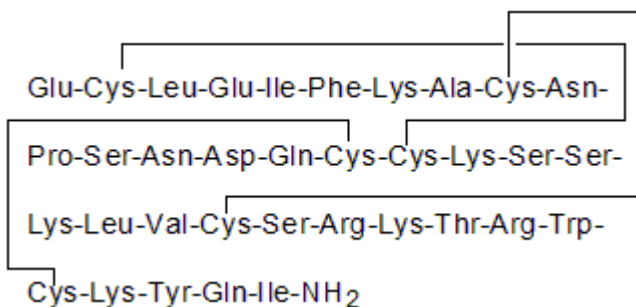
**Catalog No.:** 4718

**Batch No.:** 1

CAS Number: 526224-73-7

### 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>174</sub>H<sub>278</sub>N<sub>52</sub>O<sub>51</sub>S<sub>6</sub>  
**Batch Molecular Weight:** 4106.79  
**Physical Appearance:** White lyophilised solid  
**Counter Ion:** TFA  
**Solubility:** Soluble to 1 mg/ml in water  
**Storage:** Store at -20°C  
**Peptide Sequence:**



### 2. ANALYTICAL DATA

**HPLC:** Shows 100% 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 Na<sub>v</sub>1.7 channel blocker. Preferentially inhibits neuronal Na<sub>v</sub>1.7, 1.2 and 1.3 (IC<sub>50</sub> values are 26, 150 and 338 nM respectively), compared to muscle subtypes Na<sub>v</sub>1.4 and 1.5 (IC<sub>50</sub> = >10 μM). Inhibits the channel by binding at the neurotoxin receptor site 4 in the S3-S4 linker of domain II, trapping the voltage sensor in the inward, closed configuration.

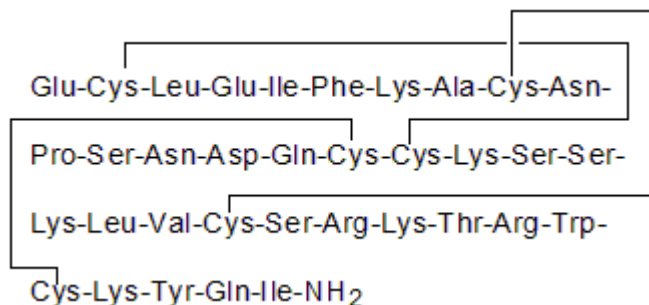
**Physical and Chemical Properties:**

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Batch Molecular Weight: 4106.79

Physical Appearance: White lyophilised solid

**Peptide Sequence:**



**Storage:** Store at -20°C

**Solubility & Usage Info:**

Soluble to 1 mg/ml in water

This product is supplied as a lyophilised solid and may be very hard to visualise. 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:**

Xiao *et al* (2008) Tarantula huwentoxin-IV inhibits neuronal sodium channels by binding to receptor site 4 and trapping the domain II voltage sensor in the closed configuration. *J.Biol.Chem.* **283** 27300. PMID: 18628201.

Xiao *et al* (2011) Common molecular determinants of tarantula huwentoxin-IV inhibition of Na<sup>+</sup> channel voltage sensors in domains II and IV. *J.Biol.Chem.* **286** 27301. PMID: 21659528.

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