

Certificate of Analysis

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Product Name: Tertiapin-Q
CAS Number: 910044-56-3

Catalog No.: 1316 **Batch No.:** 25

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₁₀₆H₁₇₅N₃₅O₂₄S₄
Batch Molecular Weight: 2452
Physical Appearance: White lyophilised solid
Counter Ion: TFA
Solubility: Soluble to 2 mg/ml in water
Storage: Store at -20°C
Peptide Sequence:
 Ala-Leu-Cys-Asn-Cys-Asn-Arg-Ile-Ile-Ile-Pro-
 └─┘ └─┘
 His-Gln-Cys-Trp-Lys-Lys-Cys-Gly-Lys-Lys-NH₂

2. ANALYTICAL DATA

HPLC: Shows 99.0% purity
Mass Spectrum: Consistent with structure

3. AMINO ACID ANALYSIS DATA

Amino Acid Theoretical Actual			Amino Acid Theoretical Actual		
Ala	1.00	1.02	Lys	4.00	3.98
Arg	1.00	0.93	Met		
Asx	2.00	1.96	Phe		
Cys	4.00	Not Detected	Pro	1.00	0.99
Glx	1.00	1.01	Ser		
Gly	1.00	1.02	Thr		
His	1.00	1.02	Trp	1.00	Not Detected
Ile	3.00	2.32	Tyr		
Leu	1.00	0.94	Val		

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

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Product Name: Tertiapin-Q

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Batch No.: 25

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Description:

Tertiapin-Q is a high affinity blocker for inward-rectifier K⁺ channels. Tertiapin-Q is a stable derivative of the bee venom toxin tertiapin. Tertiapin-Q binds to ROMK1 (K_{ir}1.1) and GIRK1/4 (K_{ir}3.1/3.4) channels with high affinity (K_i values are 1.3 and 13.3 nM respectively) and is selective over K_{ir}2.1 channels. Tertiapin-Q improves heart rate and atrioventricular conduction in a mouse model of bradycardia. Derivative Tertiapin LQ (Cat. No. 4339) also available.

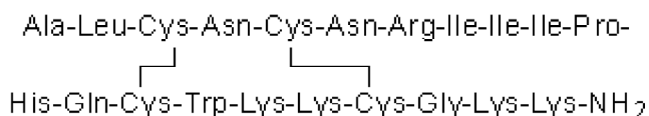
Physical and Chemical Properties:

Batch Molecular Formula: C₁₀₆H₁₇₅N₃₅O₂₄S₄

Batch Molecular Weight: 2452

Physical Appearance: White lyophilised solid

Peptide Sequence:



Storage: Store at -20°C

Solubility & Usage Info:

Soluble to 2 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:

Sold under license granted by the University of Pennsylvania

References:

Bidaud et al (2020) Inhibition of G protein-gated K⁺ channels by tertiapin-Q rescues sinus node dysfunction and atrioventricular conduction in mouse models of primary bradycardia *Sci.Rep.* **10** 9835. PMID: 32555258.

Jin et al (1999) Mechanisms of inward-rectifier K⁺ channel inhibition by tertiapin-Q. *Biochemistry* **38** 14294. PMID: 10572004.

Jin and Lu (1999) Synthesis of a stable form of tertiapin: a high-affinity inhibitor for inward-rectifier K⁺ channels. *Biochemistry* **38** 14286. PMID: 10572003.

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