

Product Name: Urotensin II (human)

Catalog No.: 1642

Batch No.: 3

CAS Number: 251293-28-4

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₆₄H₈₅N₁₃O₁₈S₂
Batch Molecular Weight: 1388.57
Physical Appearance: White lyophilised solid
Net Peptide Content: 79%
Counter Ion: Trifluoroacetate
Solubility: Soluble to 1 mg/ml in 20% acetonitrile / water
Storage: Desiccate at -20°C
Peptide Sequence: Glu-Thr-Pro-Asp-Cys-Phe-Trp-Lys-Tyr-Cys-Val

2. ANALYTICAL DATA

HPLC: Shows >99% purity
Mass Spectrum: Consistent with structure

3. AMINO ACID ANALYSIS DATA

Amino Acid		Theoretical	Actual	Amino Acid		Theoretical	Actual
Ala				Lys	1.00	1.00	
Arg				Met			
Asx	1.00	1.00		Phe	1.00	1.01	
Cys				Pro	1.00	0.99	
Glx	1.00	0.99		Ser			
Gly				Thr	1.00	1.02	
His				Trp			
Ile				Tyr	1.00	1.00	
Leu				Val	1.00	0.98	

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Description:

Potent endogenous peptide agonist for the urotensin-II receptor ($EC_{50} = 0.1$ nM). Displays arterio-selective vasoconstriction and vasodilatation in mammals in vitro and in vivo, effects which vary between species. Also has been shown to mediate bronchoconstriction.

Physical and Chemical Properties:

Batch Molecular Formula: $C_{64}H_{85}N_{13}O_{18}S_2$

Batch Molecular Weight: 1388.57

Physical Appearance: White lyophilised solid

Peptide Sequence:

Glu-Thr-Pro-Asp-Cys-Phe-Trp-Lys-Tyr-Cys-Val

Storage: Desiccate at $-20^{\circ}C$

Solubility & Usage Info:

Soluble to 1 mg/ml in 20% acetonitrile / 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: 79% (Remaining weight made up of counterions and residual water).

Counter Ion: Trifluoroacetate

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a $45-60^{\circ}C$ 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 $-20^{\circ}C$. 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 $0.2 \mu m$ filter to remove potential bacterial contamination whenever possible.

References:

Coulouarn et al (1998) Cloning of the cDNA encoding the urotensin II precursor in frog and human reveals intense expression of the urotensin II gene in motoneurons of the spinal cord. *Proc.Natl.Acad.Sci.U.S.A.* **95** 15803. PMID: 9861051.

Nothacker et al (1999) Identification of the natural ligand of an orphan G-protein-coupled receptor involved in the regulation of vasoconstriction. *Nat.Cell.Biol.* **1** 383. PMID: 10559967.

Maguire and Davenport (2002) Is urotensin-II the new endothelin? *Br.J.Pharmacol* **137** 579. PMID: 12381671.

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