

Certificate of Analysis

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Product Name: Peptide 5
CAS Number: 916977-43-0

Catalog No.: 6394 **Batch No.:** 1

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₆₀H₉₈N₁₆O₂₀S
Batch Molecular Weight: 1395.59
Physical Appearance: White lyophilised solid
Net Peptide Content: 72%
Counter Ion: TFA
Solubility: Soluble to 2 mg/ml in water
Storage: Store at -20°C
Peptide Sequence: Val-Asp-Cys-Phe-Leu-Ser-Arg-Pro-Thr-Glu-Lys-Thr

2. ANALYTICAL DATA

HPLC: Shows 95.7% purity
Mass Spectrum: Consistent with structure

3. AMINO ACID ANALYSIS DATA

Amino Acid Theoretical			Actual		
Ala			Lys	1.00	0.98
Arg	1.00	1.02	Met		
Asx	1.00	1.04	Phe	1.00	1.02
Cys			Pro	1.00	0.99
Glx	1.00	0.95	Ser	1.00	0.99
Gly			Thr	2.00	1.84
His			Trp		
Ile			Tyr		
Leu	1.00	1.01	Val	1.00	0.95

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

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Product Name: Peptide 5

Catalog No.: 6394

Batch No.: 1

CAS Number: 916977-43-0

Description:

Connexin43 mimetic peptide. Reduces swelling, astrogliosis, neuroinflammation and neuronal cell death following spinal cord injury *ex vivo* and *in vivo*. Exhibits analgesic effects in models of neuropathic pain.

Physical and Chemical Properties:

Batch Molecular Formula: C₆₀H₉₈N₁₆O₂₀S

Batch Molecular Weight: 1395.59

Physical Appearance: White lyophilised solid

Peptide Sequence:

Val-Asp-Cys-Phe-Leu-Ser-Arg-Pro-Thr-Glu-Lys-Thr

Storage: Store at -20°C

Solubility & Usage Info:

Soluble to 2 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.

Net Peptide Content: 72% (Remaining weight made up of counterions and residual water).

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:

Kim *et al* (2017) Characterising the mode of action of extracellular Connexin43 channel mimetic peptides in an *in vitro* ischemia injury model. *Biochem.Biophys.Acta.* **1861** 68. PMID: 27816754.

Mao *et al* (2017) Characterisation of Peptide5 systemic administration for treating traumatic spinal cord injured rats. *Exp.Brain.Res.* **235** 3033. PMID: 28725925.

Tonkin *et al* (2017) Attenuation of mechanical pain hypersensitivity by treatment with Peptide5, a connexin-43 mimetic peptide, involves inhibition of NLRP3 inflammasome in nerve-injured mice. *Exp.Neurol.* **300** 1. PMID: 29055716.

O'Carroll *et al* (2008) Connexin 43 mimetic peptides reduce swelling, astrogliosis and neuronal cell death after spinal cord injury. *Cell.Commun.Adhes.* **15** 27. PMID: 18649176.

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