

Product Name: Spadin
CAS Number: 1270083-24-3

Catalog No.: 5594 **Batch No.:** 8

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₉₆H₁₄₂N₂₆O₂₂
Batch Molecular Weight: 2012.34
Physical Appearance: White lyophilised solid
Counter Ion: TFA
Solubility: Soluble to 2 mg/ml in water
Storage: Store at -20°C
Peptide Sequence: Tyr-Ala-Pro-Leu-Pro-Arg-Trp-Ser-Gly-Pro-Ile-Gly-Val-Ser-Trp-Gly-Leu-Arg

2. ANALYTICAL DATA

HPLC: Shows 98.4% purity
Mass Spectrum: Consistent with structure

3. AMINO ACID ANALYSIS DATA

Amino Acid		Theoretical	Actual	Amino Acid		Theoretical	Actual
Ala	1.00	0.98	Lys				
Arg	2.00	2.02	Met				
Asx			Phe				
Cys			Pro	3.00	3.01		
Glx			Ser	2.00	2.01		
Gly	3.00	3.04	Thr				
His			Trp	2.00	Detected		
Ile	1.00	1.00	Tyr	1.00	0.96		
Leu	2.00	1.99	Val	1.00	1.01		

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CAS Number: 1270083-24-3

Description:

Spadin is a potent TREK-1 channel blocker ($IC_{50} = 71$ nM). Enhances dorsal raphe nucleus 5-HT neurotransmission in mice. Induces hippocampal CREB activation and neurogenesis in adult mice. Exhibits antidepressant effects in mouse models of depression. Brain penetrant.

Physical and Chemical Properties:Batch Molecular Formula: $C_{96}H_{142}N_{26}O_{22}$

Batch Molecular Weight: 2012.34

Physical Appearance: White lyophilised solid

Peptide Sequence:**Tyr-Ala-Pro-Leu-Pro-Arg-Trp-Ser-Gly-Pro-Ile-Gly-Val-Ser-Trp-Gly-Leu-Arg****Storage:** Store at $-20^{\circ}C$ **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 $45-60^{\circ}C$ 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:

Borsotto et al (2015) Targeting two-pore domain K^{+} channels TREK-1 and TASK-3 for the treatment of depression: a new therapeutic concept. *Br.J.Pharmacol.* **172** 771. PMID: 25263033.

Mazella et al (2010) Spadin, a sortilin-derived peptide, targeting rodent TREK-1 channels: a new concept in the antidepressant drug design. *PLoS Biol.* **8** e1000355. PMID: 20405001.

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