

Certificate of Analysis

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Product Name: SHU 9119
CAS Number: 168482-23-3

Catalog No.: 3420 **Batch No.:** 7

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₅₄H₇₁N₁₅O₉
Batch Molecular Weight: 1074.25
Physical Appearance: White lyophilised solid
Net Peptide Content: 71%
Counter Ion: TFA
Solubility: Soluble to 0.20 mg/ml in water
Storage: Store at -20°C
Peptide Sequence: Ac-Nle-cyclo(-Asp-His-D-2-Nal-Arg-Trp-Lys)-NH₂

2. ANALYTICAL DATA

HPLC: Shows 97.6% purity
Mass Spectrum: Consistent with structure

3. AMINO ACID ANALYSIS DATA

Amino Acid Theoretical Actual			Amino Acid Theoretical Actual		
Ala			Lys	1.00	0.96
Arg	1.00	1.07	Met		
Asx	1.00	0.93	Phe		
Cys			Pro		
Glx			Ser		
Gly			Thr		
His	1.00	1.04	Trp	1.00	Detected
Ile			Tyr		
Leu			Val		

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

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Description:

Potent melanocortin MC₃ and MC₄ receptor antagonist (IC₅₀ values are 0.23 and 0.06 nM respectively) and MC₅ partial agonist (EC₅₀ = 0.12 nM). Upregulates expression of genes promoting lipogenesis and triglyceride storage (SCD1, LPL, ACC α and FAS), increases triglyceride synthesis and promotes insulin resistance. Increases food intake, body weight and fat mass when administered centrally in vivo.

Physical and Chemical Properties:

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Batch Molecular Weight: 1074.25

Physical Appearance: White lyophilised solid

Peptide Sequence:

Ac-Nle-
cyclo(-Asp-His-D-2-Nal-Arg-Trp-Lys)-NH₂

Storage: Store at -20°C

Solubility & Usage Info:

Soluble to 0.20 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: 71% (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 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 μ m filter to remove potential bacterial contamination whenever possible.

References:

Grieco *et al* (2007) Further structure-activity studies with lactam derivatives of MT-II and SHU-9119: Their activity and selectivity at human melanocortin receptors 3, 4 and 5. *Peptides* **28** 1191. PMID: 17482720.

Nogueiras *et al* (2007) The central melanocortin system directly controls peripheral lipid metabolism. *J.Clin.Invest.* **117** 3475. PMID: 17885689.

Hruby *et al* (1995) Cyclic lactam α -melanotropin analogues of Ac-Nle⁴-cyclo[Asp⁵,D-Phe⁷,Lys¹⁰] α -melanocyte-stimulating hormone-(4-10)-NH₂ with bulky aromatic amino acids at position 7 show high antagonist potency and selectivity at specific melanocortin receptors. *J.Med.Chem.* **38** 3454. PMID: 7658432.

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