

# Certificate of Analysis

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

**Catalog No.:** 3420      **Batch No.:** 12

## 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>54</sub>H<sub>71</sub>N<sub>15</sub>O<sub>9</sub>  
**Batch Molecular Weight:** 1074.25  
**Physical Appearance:** White lyophilised solid  
**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)-NH<sub>2</sub>

## 2. ANALYTICAL DATA

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

## 3. AMINO ACID ANALYSIS DATA

Amino Acid Theoretical			Actual		
Ala			Lys	1.00	0.97
Arg	1.00	1.01	Met		
Asx	1.00	1.00	Phe		
Cys			Pro		
Glx			Ser		
Gly			Thr		
His	1.00	1.02	Trp	1.00	0.67
Ile			Tyr		
Leu			Val		

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

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**Description:**

SHU 9119 is a potent melanocortin MC<sub>3</sub> and MC<sub>4</sub> receptor antagonist (IC<sub>50</sub> values are 0.23 and 0.06 nM respectively) and MC<sub>5</sub> partial agonist (EC<sub>50</sub> = 0.12 nM). Upregulates expression of genes promoting lipogenesis and triglyceride storage (SCD1, LPL, ACC $\alpha$  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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Physical Appearance: White lyophilised solid

**Peptide Sequence:**

Ac-Nle-  
cyclo(-Asp-His-D-2-Nal-Arg-Trp-Lys)-NH<sub>2</sub>

**Storage:** Store at -20°C

**Solubility & Usage Info:**

Soluble to 0.20 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 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  $\mu$ 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  $\alpha$ -melanotropin analogues of Ac-Nle4-cyclo[Asp5,D-Phe7,Lys10]  $\alpha$ -melanocyte-stimulating hormone-(4-10)-NH<sub>2</sub> with bulky aromatic amino acids at position 7 show high antagonist potency a *J.Med.Chem.* **38** 3454. PMID: 7658432.

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