

## Certificate of Analysis

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**Product Name:** Nocistatin (bovine)

**Catalog No.:** 1118

**Batch No.:** 5

CAS Number: 208253-85-4

### 1. PHYSICAL AND CHEMICAL PROPERTIES

<b>Batch Molecular Formula:</b>	C <sub>82</sub> H <sub>135</sub> N <sub>21</sub> O <sub>32</sub>
<b>Batch Molecular Weight:</b>	1927.07
<b>Physical Appearance:</b>	White lyophilised solid
<b>Net Peptide Content:</b>	94%
<b>Counter Ion:</b>	Acetate
<b>Solubility:</b>	Soluble to 2 mg/ml in PBS
<b>Storage:</b>	Desiccate at -20°C
<b>Peptide Sequence:</b>	Thr-Glu-Pro-Gly-Leu-Glu-Glu-Val-Gly-Glu-Ile-Glu-Gln-Lys-Gln-Leu-Gln

### 2. ANALYTICAL DATA

<b>HPLC:</b>	Shows 98% purity
<b>Mass Spectrum:</b>	Consistent with structure

### 3. AMINO ACID ANALYSIS DATA

Amino Acid		Theoretical	Actual	Amino Acid		Theoretical	Actual
Ala				Lys	1.00	1.02	
Arg				Met			
Asx				Phe			
Cys				Pro	1.00	0.98	
Glx	8.00	7.71		Ser			
Gly	2.00	2.00		Thr	1.00	0.90	
His				Trp			
Ile	1.00	1.01		Tyr			
Leu	2.00	2.00		Val	1.00	1.06	

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

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**Description:**

An endogenous peptide derived from the same precursor as nociceptin, which is able to block nociceptin-induced allodynia and hyperalgesia and may play an opposing role in pain transmission. Shown to reverse nociceptin inhibition of glutamate release from rat brain slices; also modulates 5-HT transmission in the mouse neocortex via mechanisms separate from nociceptin/orphanin FQ.

**Physical and Chemical Properties:**

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Batch Molecular Weight: 1927.07

Physical Appearance: White lyophilised solid

**Peptide Sequence:**

Thr-Glu-Pro-Gly-Leu-Glu-Glu-Val-Gly-Glu-Ile-Glu-Gln-Lys-Gln-Leu-Gln

**Storage:** Desiccate at -20°C

**Solubility & Usage Info:**

Soluble to 2 mg/ml in PBS

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:** 94% (Remaining weight made up of counterions and residual water).

**Counter Ion:** Acetate

**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:**

**Nicol *et al*** (1998) Nocistatin reverses nociceptin inhibition of glutamate release from rat brain slices. *Eur.J.Pharmacol.* **356** R1. PMID: 9774260.

**Okuda-Ashitaka *et al*** (1998) Nocistatin, a peptide that blocks nociceptin action in pain transmission. *Nature* **392** 286. PMID: 9521323.

**Yamamoto *et al*** (1999) Effect of nocistatin and its interaction with nociceptin/orphanin FQ on the rat formalin test. *Neurosci.Lett.* **262** 179. PMID: 10218885.

**Fantin *et al*** (2007) Nocistatin inhibits 5-hydroxytryptamine release in the mouse neocortex via presynaptic G<sub>i/o</sub> protein linked pathways. *Br.J.Pharmacol.* **152** 549. PMID: 17618307.

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