


Certificate of Analysis

Product Name: MSG 606
CAS Number: 1416983-77-1

Catalog No.: 5954 **Batch No.:** 4

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₆₂H₈₂N₂₀O₁₃S
Batch Molecular Weight: 1347.51
Physical Appearance: White lyophilised solid
Net Peptide Content: 79%
Counter Ion: TFA
Solubility: Soluble to 1 mg/ml in water
Storage: Store at -20°C
Peptide Sequence:



Butyryl-Gly-His-D-Phe-Arg-D-Trp-Cys-Asp-Arg-
Phe-Gly-NH₂

2. ANALYTICAL DATA

HPLC: Shows 97.3% purity
Mass Spectrum: Consistent with structure

3. AMINO ACID ANALYSIS DATA

Amino Acid Theoretical Actual			Amino Acid Theoretical Actual		
Ala			Lys		
Arg	2.00	2.06	Met		
Asx	1.00	0.95	Phe	2.00	1.91
Cys	1.00	Detected	Pro		
Glx			Ser		
Gly	2.00	1.98	Thr		
His	1.00	1.10	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 human MC₁ receptor antagonist (IC₅₀ = 17 nM). Also partial agonist at human MC₃ and MC₅ receptors (EC₅₀ values are 59 and 1300 nM, respectively). Exhibits binding affinity for A375 melanoma cells in vitro. Reverses morphine-induced hyperalgesia in female mice, with no effect in male mice. γ MSH analog.

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Phe-Gly-NH₂

Storage: Store at -20°C

Solubility & Usage Info:

Soluble to 1 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: 79% (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 μ m filter to remove potential bacterial contamination whenever possible.

References:

Arouf et al (2015) Spinal and supraspinal *N*-methyl-D-aspartate and melanocortin-1 receptors contribute to a qualitative sex difference in morphine-induced hyperalgesia. *Physiol.Behav.* **147** 364. PMID: 25982086 .

Cai et al (2013) An unusual conformation of γ -melanocyte-stimulating hormone analogues leads to a selective human melanocortin 1 receptor antagonist for targeting melanoma cells. *Biochemistry* **52** 752. PMID: 23276279.

Juni et al (2010) Sex-specific mediation of opioid-induced hyperalgesia by the melanocortin-1 receptor. *Anesthesiology* **112** 181. PMID: 19996949.

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