TOCRIS
a bio-techne brand

Print Date: Apr 20th 2020

Certificate of Analysis

www.tocris.com

Product Name: **MSG 606** **Catalog No.: 5954** **Batch No.: 3**

CAS Number: 1416983-77-1

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{62}H_{82}N_{20}O_{13}S$

Batch Molecular Weight: 1347.51

Physical Appearance: White lyophilised solid

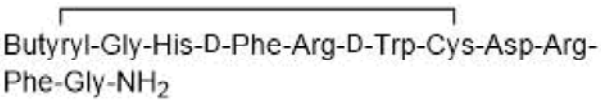
Net Peptide Content: 77%

Counter Ion: TFA

Solubility: Soluble to 1 mg/ml in water

Storage: Store at -20°C

Peptide Sequence:



2. ANALYTICAL DATA

HPLC: Shows 98.1% purity

Mass Spectrum: Consistent with structure

3. AMINO ACID ANALYSIS DATA

Amino Acid	Theoretical	Actual	Amino Acid	Theoretical	Actual
Ala			Lys		
Arg	2.00	2.04	Met		
Asx	1.00	0.99	Phe	2.00	1.99
Cys	1.00	Detected	Pro		
Glx			Ser		
Gly	2.00	2.00	Thr		
His	1.00	0.99	Trp	1.00	Detected
Ile			Tyr		
Leu			Val		

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Product Information

Product Name: **MSG 606** **Catalog No.: 5954** **Batch No.: 3**

CAS Number: 1416983-77-1

Description:

Potent human MC_1 receptor antagonist (IC_{50} = 17 nM). Also partial agonist at human MC_3 and MC_5 receptors (EC_{50} 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. γMSH analog.

Physical and Chemical Properties:

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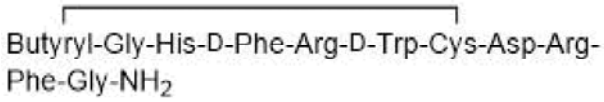
Peptide Sequence:



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: 77% (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 µm filter to remove potential bacterial contamination whenever possible.

References:

Arout *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.