

# Certificate of Analysis

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**Product Name:** α-MSH  
**CAS Number:** 581-05-5

**Catalog No.:** 2584 **Batch No.:** 6

## 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>77</sub>H<sub>109</sub>N<sub>21</sub>O<sub>19</sub>S  
**Batch Molecular Weight:** 1664.9  
**Physical Appearance:** White lyophilised solid  
**Net Peptide Content:** 78%  
**Counter Ion:** TFA  
**Solubility:** Soluble to 0.60 mg/ml in water  
**Storage:** Store at -20°C  
**Peptide Sequence:** Ac-Ser-Tyr-Ser-Met-Glu-His-Phe-Arg-Trp-Gly-Lys-Pro-Val-NH<sub>2</sub>

## 2. ANALYTICAL DATA

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

## 3. AMINO ACID ANALYSIS DATA

Amino Acid Theoretical			Actual		
Ala			Lys	1.00	1.00
Arg	1.00	0.98	Met	1.00	0.97
Asx			Phe	1.00	1.05
Cys			Pro	1.00	1.02
Glx	1.00	0.99	Ser	2.00	1.48
Gly	1.00	1.00	Thr		
His	1.00	0.98	Trp		
Ile			Tyr	1.00	0.93
Leu			Val	1.00	1.08

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## Product Information

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**Product Name:**  $\alpha$ -MSH  
**CAS Number:** 581-05-5

**Catalog No.:** 2584 **Batch No.:** 6

### Description:

$\alpha$ -MSH is an endogenous melanocortin receptor agonist ( $K_i$  values are 0.12, 31, 660 and 5700 nM for MC<sub>1</sub>, MC<sub>3</sub>, MC<sub>4</sub> and MC<sub>5</sub> receptors respectively). Anti-inflammatory peptide; antagonizes proinflammatory mediators, including TNF- $\alpha$ , IL-6 and NO and induces anti-inflammatory cytokine IL-10. Inhibits food intake and induces penile erections following i.c.v. administration.

### Physical and Chemical Properties:

Batch Molecular Formula: C<sub>77</sub>H<sub>109</sub>N<sub>21</sub>O<sub>19</sub>S  
Batch Molecular Weight: 1664.9  
Physical Appearance: White lyophilised solid

### Peptide Sequence:

Ac-Ser-Tyr-Ser-Met-Glu-His-Phe-Arg-Trp-  
Gly-Lys-Pro-Val-NH<sub>2</sub>

**Storage:** Store at -20°C

### Solubility & Usage Info:

Soluble to 0.60 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:** 78% (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  $\mu$ m filter to remove potential bacterial contamination whenever possible.

### References:

**Yamaoka-Tojo *et al*** (2006) Central neurotranspeptide, alpha-melanocyte-stimulating hormone ( $\alpha$ -MSH) is upregulated in patients with congestive heart failure. *Intern.Med.* **45** 429. PMID: 16679696.

**Mizusawa *et al*** (2002) Alpha-melanocyte stimulating hormone and oxyt. induced penile erections, and intracavernous pressure increases in the rat. *J.Urol.* **167** 757. PMID: 11792967.

**Wikber** (1999) Melanocortin receptors: perspectives for novel drugs. *Eur.J.Pharmacol.* **375** 295. PMID: 10443584.

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