

## Certificate of Analysis

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**Product Name:**  $\gamma$ 1-MSH  
**CAS Number:** 72629-65-3

**Catalog No.:** 3424      **Batch No.:** 2

### 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>72</sub>H<sub>97</sub>N<sub>21</sub>O<sub>14</sub>S  
**Batch Molecular Weight:** 1512.76  
**Physical Appearance:** White lyophilised solid  
**Net Peptide Content:** 73%  
**Counter Ion:** TFA  
**Solubility:** Soluble to 2 mg/ml in water  
**Storage:** Store at -20°C  
**Peptide Sequence:** Tyr-Val-Met-Gly-His-Phe-Arg-Trp-Asp-Arg-Phe-NH<sub>2</sub>

### 2. ANALYTICAL DATA

**HPLC:** Shows 97.8% purity  
**Mass Spectrum:** Consistent with structure

### 3. AMINO ACID ANALYSIS DATA

| Amino Acid Theoretical |      |      | Actual |      |          |
|------------------------|------|------|--------|------|----------|
| Ala                    |      |      | Lys    |      |          |
| Arg                    | 2.00 | 2.03 | Met    | 1.00 | 0.91     |
| Asx                    | 1.00 | 0.99 | Phe    | 2.00 | 2.03     |
| Cys                    |      |      | Pro    |      |          |
| Glx                    |      |      | Ser    |      |          |
| Gly                    | 1.00 | 1.01 | Thr    |      |          |
| His                    | 1.00 | 1.05 | Trp    | 1.00 | Detected |
| Ile                    |      |      | Tyr    | 1.00 | 0.97     |
| Leu                    |      |      | Val    | 1.00 | 1.00     |

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

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**Product Name:**  $\gamma$ 1-MSH

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**Description:**

Endogenous melanocortin MC<sub>3</sub> receptor agonist (pK<sub>i</sub> = 7.46) that displays ~ 40-fold selectivity over MC<sub>4</sub>. Increases the release of extracellular dopamine, which induces grooming and vertical activity (rearing) in rats. Exhibits hypertensive, tachycardic and short-term analgesic activity in vivo.

**Physical and Chemical Properties:**

Batch Molecular Formula: C<sub>72</sub>H<sub>97</sub>N<sub>21</sub>O<sub>14</sub>S

Batch Molecular Weight: 1512.76

Physical Appearance: White lyophilised solid

**Peptide Sequence:**

Tyr-Val-Met-Gly-His-Phe-Arg-Trp-Asp-Arg-  
Phe-NH<sub>2</sub>

**Storage:** Store at -20°C

**Solubility & Usage Info:**

Soluble to 2 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:** 73% (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 µm filter to remove potential bacterial contamination whenever possible.

**References:**

**Jansone et al** (2004) Opposite effects of  $\gamma$ 1- and  $\gamma$ 2-melanocyte stimulating hormone on regulation of the dopaminergic mesolimbic system in rats. *Neurosci.Lett.* **361** 68. PMID: 15135895.

**Lindblom et al** (1998) Autoradiographic discrimination of melanocortin receptors indicates that the MC3 subtype dominates in the medial rat brain. *Brain Res.* **810** 161. PMID: 9813305.

**Versteeg et al** (1998) Melanocortins and cardiovascular regulation. *Eur.J.Pharmacol.* **360** 1. PMID: 9845266.

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