

# PRODUCT INFORMATION



## $\gamma_1$ -MSH (human, mouse, rat, bovine) (trifluoroacetate salt)

Item No. 41554

**Formal Name:** L-tyrosyl-L-valyl-L-methionylglycyl-L-histidyl-L-phenylalanyl-L-arginyl-L-tryptophyl-L- $\alpha$ -aspartyl-L-arginyl-L-phenylalaninamide, trifluoroacetate salt

**Synonym:**  $\gamma_1$ -Melanocyte-stimulating Hormone

**Peptide Sequence:** YVMGHFRWDRF-NH<sub>2</sub>

**MF:** C<sub>72</sub>H<sub>97</sub>N<sub>21</sub>O<sub>14</sub>S • XCF<sub>3</sub>COOH

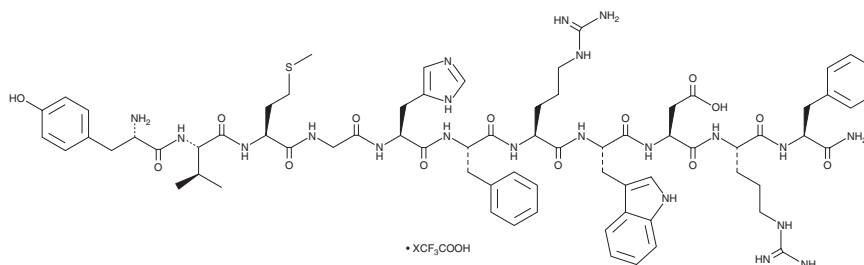
**FW:** 1,512.7

**Purity:** ≥95%

**Supplied as:** A solid

**Storage:** -20°C

**Stability:** ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

$\gamma_1$ -Melanocyte-stimulating hormone ( $\gamma_1$ -MSH) (human, mouse, rat, bovine) (trifluoroacetate salt) is supplied as a solid. A stock solution may be made by dissolving the  $\gamma_1$ -MSH (human, mouse, rat, bovine) (trifluoroacetate salt) in the solvent of choice, which should be purged with an inert gas.  $\gamma_1$ -MSH (human, mouse, rat, bovine) (trifluoroacetate salt) is soluble (≥10 mg/ml) in DMSO.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of  $\gamma_1$ -MSH (human, mouse, rat, bovine) (trifluoroacetate salt) can be prepared by directly dissolving the solid in aqueous buffers.  $\gamma_1$ -MSH is soluble (≥10 mg/ml) in PBS (pH 7.2). We do not recommend storing the aqueous solution for more than one day.

### Description

$\gamma_1$ -MSH is a peptide hormone produced by post-translational processing of proopiomelanocortin (POMC) in the pituitary gland.<sup>1</sup> It selectively binds to melanocortin receptor 1 (MC1R) and MC3R over MC4R and MC5R ( $K_i$ s = 0.025, 0.063, >100, and >100  $\mu$ M, respectively, in insect cells expressing the human receptors) but also binds to opioid receptors in rat brain tissue homogenates ( $IC_{50}$  = 5.9  $\mu$ M).<sup>1,2</sup>  $\gamma_1$ -MSH (10  $\mu$ M) inhibits contractions induced by the neuropeptide FMRF-amide in isolated *M. edulis* catch muscle.<sup>4</sup> Intracisternal administration of  $\gamma_1$ -MSH (0.3 nmol/animal) increases the latency to tail flick in the tail-flick test and inhibits haloperidol-induced catalepsy in mice.<sup>5</sup>  $\gamma_1$ -MSH (0.01 nmol/animal) also inhibits LPS-induced nitric oxide (NO) release in mouse forebrain *in vivo*.<sup>2</sup>

### References

1. Rubakhin, S.S., Churchill, J.D., Greenough, W.T., et al. *Anal. Chem.* **78**(20), 7267-7272 (2006).
2. Muceniece, R., Zvejniece, L., Liepinsh, E., et al. *Peptides* **27**(6), 1443-1450 (2006).
3. Oki, S., Nakao, K., Nakai, Y., et al. *Eur. J. Pharmacol.* **64**(2-3), 161-164 (1980).
4. Muneoka, Y. and Saitoh, H. *Comp. Biochem. Physiol. C Comp. Pharmacol. Toxicol.* **85**(1), 207-214 (1986).
5. Klusa, V., Germane, S., Svirskis, S., et al. *Neuropeptides* **35**(1), 50-57 (2001).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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