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**Product Data Sheet**

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Product Name: Melanocyte stimulating hormone release inhibiting factor  
Cat. No.: GP10066

**Chemical Properties**

Cas. No. 2002-44-0

Chemical Name (2S)-N-[(2S)-1-[(2-amino-2-oxoethyl)amino]-4-methyl-1-oxopentan-2-yl]pyrrolidine-2-carboxamide

SMILES CC(C)CC(C(=O)NCC(=O)N)NC(=O)C1CCCN1

Formula  $C_{13}H_{24}N_4O_3$  M.Wt 284.36

Solubility  $\geq 59.1\text{mg/mL}$  in DMSO Storage Desiccate at  $-20^\circ\text{C}$

General tips For obtaining a higher solubility, please warm the tube at  $37^\circ\text{C}$  and shake it in the ultrasonic bath for a while. Stock solution can be stored below  $-20^\circ\text{C}$  for several months.

Shipping Condition Evaluation sample solution: ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure

**Background**

Melanocyte stimulating hormone release inhibiting factor, ( $C_{13}H_{24}N_4O_3$ ), a tri-peptide with the sequence H<sub>2</sub>N-Pro-Leu-Gly-amide, MW= 284.35. Melanocyte-inhibiting factor (also known as Pro-Leu-Gly-NH<sub>2</sub>, Melanostatin, MSH release-inhibiting hormone or MIF-1) is an endogenous peptide fragment derived from cleavage of the hormone oxytocin, but having generally different actions in the body<sup>(1)</sup>. MIF-1 produces multiple effects, both blocking the effects of opioid receptor activation<sup>(2)</sup>, while at the same time acting as a positive allosteric modulator of the D<sub>2</sub> and D<sub>4</sub> dopamine receptor subtypes, as well as inhibiting release of other neuropeptides such as alpha-MSH, and potentiating melatonin activity<sup>(3)</sup>. MIF-1 is unusually resistant to metabolism in the bloodstream, and crosses the blood-brain barrier easily, though it is poorly active orally and is usually injected.



**Caution: Product has not been fully validated for medical applications. For research use only.**

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**Figure1** Formula of Melanocyte stimulating hormone release inhibiting factor

**Ref:**

1. Celis ME, Taleisnik S, Walter R (July 1971). "Regulation of formation and proposed structure of the factor inhibiting the release of melanocyte-stimulating hormone". *Proceedings of the National Academy of Sciences of the United States of America* 68 (7): 1428-33.
2. Contreras PC, Takemori AE (June 1984). "Effect of prolyl-leucyl-glycinamide and alpha-melanocyte-stimulating hormone on levorphanol-induced analgesia, tolerance and dependence". *Life Sciences* 34 (26): 2559-66.
3. Sandyk R (May 1990). "MIF-induced augmentation of melatonin functions: possible relevance to mechanisms of action of MIF-1 in movement disorders". *The International Journal of Neuroscience* 52 (1-2): 59-65.

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