
Product Data Sheet

Product Name: a-MSH, amide

Cat. No.: GP10060

Chemical Properties

Cas. No.

Formula C₇₇H₁₀₉N₂₁O₁₉S₁

M.Wt 1664.9

Solubility ≥ 166.5mg/mL in DMSO with gentle warming

Storage Store at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°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 **Protocol****Protocol for melanogenesis [1]:**

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1. B16F10 melanoma cells were seeded at 3.4×10^4 cells/well in a 6-well plate.
2. The cells were treated with 10 nM α -MSH for 72 h.
3. The cells were collected by trypsinization and suspended in 150 μ L of 1 N NaOH.

After heating at 80 °C for 1 h, the absorbance at 405 nm was measured using a microplate reader.

1. The final relative melanin content was normalized to the total protein content, measured using a BCA assay kit.

This protocol only provides a guideline, and should be modified according to your specific needs.

References:

[1]. Zhou S, Riadh D, et.al. Grape Extract Promoted α -MSH-Induced Melanogenesis in B16F10 Melanoma Cells, Which Was Inverse to Resveratrol. *Molecules*. 2021 Oct 1;26(19):5959. doi: 10.3390/molecules26195959. PMID: 34641503; PMCID: PMC8512250.

Cell experiment [1]:

Cell lines	B16F10 cells
Preparation method	Cells were incubation with α -MSH.

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Reaction Conditions	1 μ M, 72 h
Applications	In α -MSH-stimulated B16F10 cells, autophagosomes engulfing melanosomes following Pt treatment.
Animal experiment [2]:	
Animal models	TgCRND8 mouse model of AD
Preparation method	Mice were treated with either α -MSH or vehicle via daily intraperitoneal injections for 28 d.
Dosage form	0.5mg/kg;i.p;28days
Applications	α -MSH modulated the excitatory-inhibitory balance in the brain by restoring GABAergic inhibition and improved cognition in TgCRND8 mice.

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[1]. Hseu YC, Vudhya Gowrisankar Y, et,al.The in vitro and in vivo depigmenting activity of pterostilbene through induction of autophagy in melanocytes and inhibition of UVA-irradiated α -MSH in keratinocytes via Nrf2-mediated antioxidant pathways.

Redox Biol. 2021 Aug;44:102007. doi:

10.1016/j.redox.2021.102007. Epub 2021 May 19. PMID:

34049220; PMCID: PMC8167190.

[2].Biros DJ, Namba K, et,al.Alpha-MSH regulates protein

ubiquitination in T cells. Cell Mol Biol (Noisy-le-grand). 2006 May

30;52(2):33-8. PMID: 16914084; PMCID: PMC4698146.

Background

α -MSH (α -Melanocyte-Stimulating Hormone), amide engages the melanocortin-1 receptor and activates cyclic AMP (cAMP) signaling via a G-protein transporter, can synthesize melanin. It is an endogenous neuropeptide, a post-translational derivative of pro-opiomelanocortin (POMC). It is an endogenous melanocortin receptor 4 (MC4R) agonist with anti-inflammatory and antipyretic activities[1-4,10].

α -MSH-treated(1 hour; 300pg/ml) T cells showed higher levels of protein ubiquitination. Resting T cells treated with alpha-MSH also demonstrated enhanced protein ubiquitination[5].In α -MSH-stimulated(1 μ M, 72 h) B16F10 cells, autophagosomes engulfing melanosomes following Pt treatment[6]. α -MSH regulates central nervous system inflammation by acting directly on melanocortin receptors in glial cells. α -MSH regulates the activation of NF κ B. α -MSH inhibits nuclear transmigration of transcription factor κ B[7].

α -MSH(0.5mg/kg;i.p;28days) modulated the excitatory-inhibitory balance in the brain by restoring GABAergic inhibition and improved cognition in TgCRND8 mice[8]. α -MSH(2, 6, 20 or 60 nmol)plays an important regulatory role in the spinal defecation center of rats. Intrathecal administration of α -MSH in mice can enhance the colonic movement of the L6-S1 spinal cord and block the pelvic nerve, but the pro-kinetic effect of α -MSH disappeared[9].

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- [3]. Catania A, Delgado R, et.al.alpha-MSH in systemic inflammation. Central and peripheral actions. *Ann N Y Acad Sci*. 1999 Oct 20;885:183-7. doi: 10.1111/j.1749-6632.1999.tb08675.x. PMID: 10816651.
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- [5]. Biros DJ, Namba K, et.al.Alpha-MSH regulates protein ubiquitination in T cells. *Cell Mol Biol (Noisy-le-grand)*. 2006 May 30;52(2):33-8. PMID: 16914084; PMCID: PMC4698146.
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- [10]. Song, X.; Mosby, N.; Yang, J.; Xu, A.; Abdel-Malek, Z.; Kadekaro, A.L. alpha-MSH activates immediate defense responses to UV-induced oxidative stress in human melanocytes. *Pigment Cell Melanoma Res*. 2009, 22, 809-818.

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