

## **$\alpha$ -MSH Protein**

**A Ligand of Melanocortin G-Protein Coupled Receptor**

**Catalog # PG10016**

### **Specification**

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#### **$\alpha$ -MSH Protein - Product Information**

#### **$\alpha$ -MSH Protein - Additional Information**

##### **Storage**

-20°C

##### **Precautions**

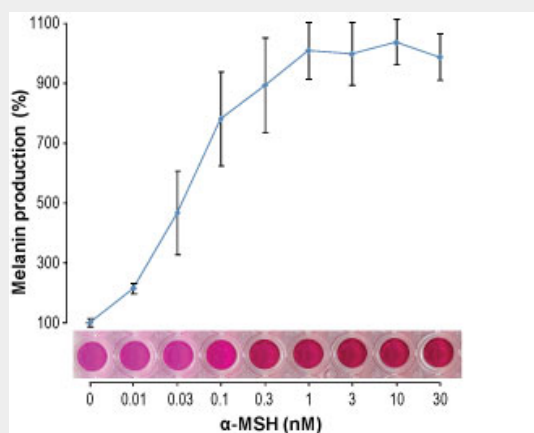
$\alpha$ -MSH Protein is for research use only and not for use in diagnostic or therapeutic procedures.

#### **$\alpha$ -MSH Protein - Protocols**

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

#### **$\alpha$ -MSH Protein - Images**



$\alpha$ -MSH - Abgent  $\alpha$ -MSH induces melanogenesis in B16 melanoma cells. Cells were incubated with increasing concentrations of  $\alpha$ -MSH (#PG10016). Melanin production was measured after 3 days and plotted against  $\alpha$ -MSH concentrations (ED50 = 67 ng/ml, upper graph). Below the

graph is a visual representation of melanin production intensity following  $\alpha$ -MSH stimulation for three days.

### **$\alpha$ -MSH Protein - Background**

$\alpha$ -MSH is a neuropeptide originally isolated from the pituitary gland<sup>1</sup>.  $\alpha$ -MSH is produced by post-translational processing of a precursor protein, proopiomelanocortin (POMC)<sup>2</sup>. In most vertebrates but not in mammals,  $\alpha$ -MSH is produced in the intermediate lobe of the pituitary gland. The biological activities of  $\alpha$ -MSH are mediated through a family of five specific G-protein coupled receptors: MCR1, MCR2, MCR3, MCR4, and MCR5.  $\alpha$ -MSH is an evolutionarily highly conserved peptide action that induces pigment dispersion in skin melanocytes of amphibians, reptiles and mammals by stimulating melanin production<sup>3,4</sup>. However, in human and other mammals,  $\alpha$ -MSH acts in the brain in appetite suppression and sexual arousal. Some cases of extreme obesity have been traced to mutated  $\alpha$ -MSH receptor in the brain. Presumably, these people are unable to respond to the appetite-suppressing effect of  $\alpha$ -MSH<sup>5</sup>.  $\alpha$ -MSH has significant anti-inflammatory properties, mediated through its binding to MCR16 and includes regulation of expression and secretion of chemokines, downregulation of proinflammatory signal-induced NF- $\kappa$ B activation and adhesion molecule expression, prostaglandin E2 synthesis, as well as induction of interleukin-10<sup>7</sup>.

### **$\alpha$ -MSH Protein - References**

1 . Lerner, A.B. et al. (1954) *AMA Arch. Derm. Syphilol.*70,669.2 . Pritchard, L.E, and White, A. (2007) *Endocrinology*148,4201.3 . Nakanishi, S. et al.(1979)*Nature*278,423.4 . Tsatmali, T. et al.(2002)*J. Histochem. Cytochem.*50,125.5 . Bloomgarden, Z. T. (2002) *Diabetes Care.*25,789.6 . Catania, A. et al.(2004)*Pharmacol. Rev.*56,1.7 . Böhm, M. et al.(2006)*Cell. Mol. Biol.*52,61.