Recombinant Human AgRP/ART C-Terminal Fragment, aa 83-132

Catalog Number: 3726-AG

DESCRIPTION

Source	*E. coli*-derived Ser83-Thr132 Accession # O00253
N-terminal Sequence Analysis	Ser83
Predicted Molecular Mass	5.6 kDa

SPECIFICATIONS

Activity	Measured by its ability to antagonize α-MSH-induced cAMP accumulation in HEK293 human embryonic kidney cells transfected with human Melanocortin-4 Receptor. Ollmann, M.M. *et al.* (1997) Science **278**:135. The ED_{50} for this effect is typically 0.03-0.15 µg/mL in the presence of 10 ng/mL of α-MSH.
Endotoxin Level	<0.01 EU per 1 µg of the protein by the LAL method.
Purity	>97%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Agouti-Related Protein (AgRP), the protein product of the Agouti-Related Transcript (ART), is a neuropeptide that regulates energy metabolism and the development of obesity by antagonizing α-melanocyte stimulating hormone (α-MSH) on MC-3 and MC-4 receptors (1 - 4). AgRP is predominantly expressed in the hypothalamus and adrenal medulla (5). Mature human AgRP is a 112 amino acid (aa) peptide; its C-terminal portion contains ten conserved cysteines that form five disulfide bonds (5, 6). Within the C-terminal region, human AgRP shares 80% and 72% aa sequence identity with mouse and rat AgRP, respectively. It shares 44% aa sequence identity with Agouti. As in the case of Agouti, the C-terminal cysteine-rich region is sufficient for biological activity (7). AgRP is 100 times more potent than Agouti in antagonizing MC-3 and MC-4 receptors (8). AgRP also induces the β-arrestin dependent endocytosis of MC-3 and MC-4 (9). Hypothalamic expression of AgRP is upregulated in obesity and diabetes (5, 10), and chronic AgRP administration increases food intake and weight gain in rats (11). Genetically-linked polymorphisms of AgRP in humans are associated with susceptibility to anorexia nervosa (12, 13). In addition, AgRP inhibits the ACTH-induced synthesis of steroid hormones in a mechanism that does not involve melanocortin receptors (14).

References:

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