

Active Recombinant Human Agouti Related Protein

Cat. No. AGRP -63H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	A DNA sequence encoding the amino acids Met 1 - Thr 132 of the human AgRP, the protein product of the Agouti-Related Transcript (ART) (Shutter, J.R. et al., 1997, Genes Dev. 11(5):593 - 602) was fused with a 6X histidine tag at the C-terminus. The protein was expressed in the insect cell line Sf21.
Species	Human
Source	Sf21 Cells
Description	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 aa peptide; its C-terminal portion contains ten conserved cysteines that form five disulfide bonds (5, 6). Human AgRP shares 82% and 72% aa sequence identity with mouse and rat AgRP, respectively. It shares 32% 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 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

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hormones in a mechanism that does not involve melanocortin receptors (14).References:1. Martin, N.M. et al., 2006, Peptides 27:333.2. Fan, W. et al., 1997, Nature 385:165.3. Ollmann, M.M. et al., 1997, Science 278:135.4. Arora, S. and Anubhuti, 2006, Neuropeptides 40:375.5. Shutter, J.R. et al., 1997, Genes Develop. 11:593.6. Kiefer, L.L. et al., 1998, Biochemistry 37:991.7. Jackson, P.J. et al., 2002, Biochemistry 41:7565.8. Fong, T.M. et al., 1997, Biochem. Biophys. Res. Commun. 237:629.9. Breit, A. et al., 2006, J. Biol. Chem. 281:37447.10. Katsuki, A. et al., 2001, J. Clin. Endocrinol. Metab. 86:1921.11. Small, C.K. et al., 2001, Diabetes 50:248.12. Vink, T. et al., 2001, Mol. Psychiatry 6:325.13. Dardennes, R.M. et al., 2007, Psychoneuroendocrinology 32:106.14. Doghman, M. et al., 2007, Mol. Cell. Endocrinol. 265 - 266:108.Note: This protein is designed for use as an ELISA control.

Bio-activity

Bioactivity data is not available at this time. This preparation is intended for use as a control in AgRP ELISA.

Molecular Mass

Based on N-terminal sequencing, the mature recombinant human AgRP preparation contains peptides that start at Ala 21 and Leu 47. The recombinant human AgRP peptide have migrated with apparent molecular mass of approximately 14 - 19 kDa in SDS-PAGE under r

Endotoxin

< 1.0 eu per 1 µg of the cytokine as determined by the lal

Purity

>90%, as determined by SDS-PAGE and visualized by silver stain.

Storage

Upon reconstitution, this cytokine, in the presence of a carrier protein, can be stored under sterile conditions at 2 - 8° C for one month or at -20° C to -70° C in a manual defrost freezer for three months without detectable loss of activity. Avoid repeated freeze-thaw cycles.

Reconstitution

It is recommended that sterile PBS containing at least 0.1% human serum albumin or

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bovine serum albumin be added to the vial to prepare a stock solution of no less than 10 µg/ml.

GENE INFORMATION

Gene Name	AGRP agouti related protein homolog (mouse) [Homo sapiens]
Official Symbol	AGRP
Synonyms	AGRP; agouti related protein homolog (mouse); agouti (mouse) related protein; agouti-related protein; Agrt; ART; ASIP2; AGRT;
Gene ID	181
mRNA Refseq	NM_001138
Protein Refseq	NP_001129
MIM	602311
UniProt ID	O00253
Chromosome Location	16q22
Pathway	Adipocytokine signaling pathway, organism-specific biosystem; Adipocytokine signaling pathway, conserved biosystem; Syndecan-3-mediated signaling events, organism-specific biosystem;
Function	neuropeptide hormone activity; receptor binding;

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