Agouti-Related Protein Human E. coli

Product Data Sheet

Type: Recombinant
Source: E. coli
Species: Human
Other names: AGRP, AGRT, ART

Cat. No.:
RD172030100 (0.1 mg)

Description

Total 128 AA. MW: 14.4 kDa (calculated). N-Terminal His-tag, 16 extra AA (highlighted).

Introduction to the Molecule

Agouti-related protein is an endogenous antagonist of hypothalamic alpha-melanocortin receptors MC3R and MC4R with potent orexigenic activity. Although a complete deletion of the AGRP gene does not produce any significant metabolic phenotypes, reduction in AGRP expression by RNA interference is associated with increased metabolic rate along with reduced weight gain.
In hypothalamus, it is produced by neurons in the medial portion of arcuate nucleus, which produce also the potent orexigenic peptide Neuropeptide Y (NP-Y). Another site of central AGRP production is the hypothalamic nucleus.
AGRP encompasses 132 amino acid residues and its alpha-melanocortin inhibiting activity results in a 34 amino acid cystine knot domain within the C-terminal (87-132) portion of the protein.
Both AGRP and NP-Y expression was shown to be supressed by leptin. Central administration of AGRP induces hyperphagia and increased gain in body weight in rodents, but may also exert metabolic effects even when hyperphagia is prevented. In the absence of hyperphagia, intracerebral-ventricular administration of AGRP caused significant increases in plasma leptin and insulin concentrations (two-fold and 1.5-fold, respectively) and fat pad mass.
In the perifery, AGRP mRNA was found in adrenal glands, lung, testis, ovary, skeletal muscle and adipose tissue in humans or rodents. In the adrenals, it was shown that AGRP antagonizes glucosteroid production mediated by MC4R. AGRP could then modulate locally the functions of some peripheral tissues such as adrenals.
In human and rat serum, detectable levels of AGRP-like activity were reported in the lower picogram range. The serum AGRP levels were elevated in obese humans compared to lean controls and increased with fasting in rats.

Research topic

Energy metabolism and body weight regulation

Amino Acid Sequence

MKHHHHHHHM LVPRGSAQMG LAPMEGIRRP DQALLPELPG LGLRAPLKKT TAEQAEEDLL QEAQALAEVL DLQDREPRSS RRCVRLHESC LGQQVPCCDP CATCYCRFFN AFCYCRKLGT AMNPCSRT

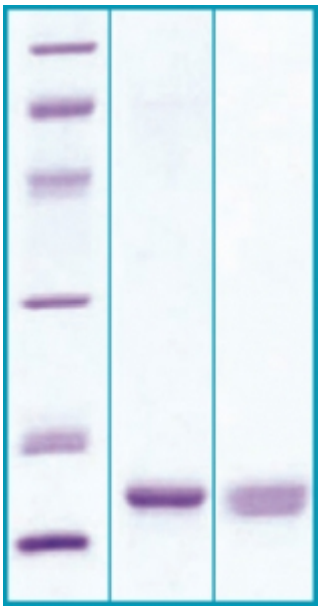
Source

E. coli

Purity

>95%

SDS-PAGE gel



12% SDS-PAGE separation of Human AGRP
1. M.W. marker - 14, 21, 31, 45, 66, 97 kDa
2. reduced and heated sample, 5µg/lane
3. non-reduced and non-heated sample, 5µg/lane

Formulation

Filtered (0,4 µm) and lyophilized in 0.5 mg/mL in 5mM TRIS, 25mM NaCl, pH 7.5

Reconstitution

Add deionized water to prepare a working stock solution of approximately 0.5 mg/mL and let the lyophilized pellet dissolve completely. Product is not sterile! Please filter the product by an appropriate sterile filter before using it in the cell culture.

Shipping

At ambient temperature. Upon receipt, store the product at the temperature recommended below.

Storage, Stability/Shelf Life

Store lyophilized protein at -20°C. Lyophilized protein remains stable until the expiry date when stored at -20°C. Aliquot reconstituted protein to avoid repeated freezing/thawing cycles and store at -80°C for long term storage. Reconstituted protein can be stored at 4°C for a limited period of time; it does not show any change after one week at 4°C.

Quality Control Test

BCA to determine quantity of the protein.
SDS PAGE to determine purity of the protein.

Applications

ELISA, Western blotting

Note

This product is intended for research use only.

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