Agouti-Related Protein (AGRP) Human, Rabbit Polyclonal Antibody

Product Data Sheet

Source of Antigen: *E. coli* Cat. No.: RD181030050

Host: Rabbit (0.05 mg)

Other names: AGRP, AGRT, ART

Research topic

Energy metabolism and body weight regulation

Preparation

The antibody was raised in rabbits by immunization with the recombinant Human Agouti-Related Protein.

Amino Acid Sequence

The immunization antigen (14.4 kDa) is a protein containing 128 AA of recombinant Human Agouti-Related Protein. N-Terminal His-tag, 16 extra AA (highlighted).

MKHHHHHHHMH LVPRGS AQMG LAPMEGIRRP DQALLPELFPG LQLRALPLKT TAEQAEDDL QEAQALAEVL DLQDREPRSS

RRCCVRLHESC LGQQVPCCDP CATCYCRFFN AFCYCRKLG AYNPCTRT

Species Reactivity

Human

Not yet tested in other species.

Purification Method

Immunofinity chromatography on a column with immobilized recombinant Human Agouti-Related Protein.

Antibody Content

0.05 mg (determined by BCA method, BSA was used as a standard)

Formulation

The antibody is lyophilized in 0.05 M phosphate buffer, 0.1 M NaCl, pH 7.2. AZIDE FREE.

Reconstitution

Add 0.05 ml of deionized water and let the lyophilized pellet dissolve completely. Slight turbidity may occur after reconstitution, which does not affect activity of the antibody. In this case clarify the solution by centrifugation.

Shipping

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

Storage/Stability

The lyophilized antibody remains stable and fully active until the expiry date when stored at -20°C. Aliquot the product after reconstitution to avoid repeated freezing/thawing cycles and store frozen at -80°C. Reconstituted antibody can be stored at 4°C for a limited period of time; it does not show decline in activity after one week at 4°C.

Expiration

See vial label.

Lot Number

See vial label.

Quality Control Test

Indirect ELISA - to determine titer of the antibody

SDS PAGE - to determine purity of the antibody
Applications
ELISA, Western blotting

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 suppressed 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, intracerebralventricular 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 periphery, 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.

Note
This product is for research use only.