

AGRP (M-20): sc-18634

BACKGROUND

ASP (agouti signaling protein or agouti switch protein) is a paracrine signaling molecule that causes hair follicle melanocytes to synthesize pheomelanin, a yellow pigment, instead of the black or brown pigment eumelanin. Consequently, agouti mice produce hairs with a subapical yellow band on an otherwise black or brown background when expressed during the midportion of hair growth. ASP is a 132-amino acid protein with a consensus signal peptide, indicating that the protein is probably secreted and is normally expressed in neonatal skin. The gene which encodes for ASP maps to human chromosome 20q11.2. AGRP (agouti-related protein) is a potent, selective antagonist of MC3R and MC4R. AGRP normally regulates body weight via central melanocortin receptors, analogous to the relation between agouti and MC1R for regulation of pigmentation. AGRP is expressed primarily in the adrenal gland, subthalamic nucleus, and hypothalamus, with a lower level of expression occurring in testis, lung and kidney. The gene which encodes for AGRP maps to human chromosome 16q22.

REFERENCES

1. Kwon, H.Y., et al. 1994. Molecular structure and chromosomal mapping of the human homolog of the agouti gene. *Proc. Natl. Acad. Sci. USA* 91: 9760-9764.
2. Ollmann, M.M., et al. 1997. Antagonism of central melanocortin receptors *in vitro* and *in vivo* by agouti-related protein. *Science* 278: 135-138.
3. Shutter, J.R., et al. 1997. Hypothalamic expression of ART, a novel gene related to agouti, is up-regulated in obese and diabetic mutant mice. *Genes Dev.* 11: 593-602.
4. Katsuki, A., et al. 2001. Plasma levels of agouti-related protein are increased in obese men. *J. Clin. Endocrinol. Metab.* 86: 1921-1924.
5. LocusLink Report (LocusID: 600201). <http://www.ncbi.nlm.nih.gov/LocusLink>

CHROMOSOMAL LOCATION

Genetic locus: *Agrp* (mouse) mapping to 8 D3.

SOURCE

AGRP (M-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of AGRP of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-18634 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

AGRP (M-20) is recommended for detection of AGRP of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

AGRP (M-20) is also recommended for detection of AGRP in additional species, including canine.

Suitable for use as control antibody for AGRP siRNA (m): sc-39288, AGRP siRNA (r): sc-270205, AGRP shRNA Plasmid (m): sc-39288-SH, AGRP shRNA Plasmid (r): sc-270205-SH, AGRP shRNA (m) Lentiviral Particles: sc-39288-V and AGRP shRNA (r) Lentiviral Particles: sc-270205-V.

Molecular Weight of AGRP: 14 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Moraes, J.C., et al. 2009. High-fat diet induces apoptosis of hypothalamic neurons. *PLoS ONE* 4: e5045.
2. Kim, S.J., et al. 2009. Rutecarpine ameliorates bodyweight gain through the inhibition of orexigenic neuropeptides NPY and AgRP in mice. *Biochem. Biophys. Res. Commun.* 389: 437-442.
3. Colldén, G., et al. 2010. P2X2 purinoreceptor protein in hypothalamic neurons associated with the regulation of food intake. *Neuroscience* 171: 62-78.
4. Sasaki, T., et al. 2010. Induction of hypothalamic Sirt1 leads to cessation of feeding via agouti-related peptide. *Endocrinology* 151: 2556-2566.
5. Razolli, D.S., et al. 2012. Hypothalamic action of glutamate leads to body mass reduction through a mechanism partially dependent on JAK2. *J. Cell. Biochem.* 113: 1182-1189.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.