SANTA CRUZ BIOTECHNOLOGY, INC.

AGRP siRNA (m): sc-39288

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 16q22.1.

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 upregulated 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.

PRODUCT

AGRP siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see AGRP shRNA Plasmid (m): sc-39288-SH and AGRP shRNA (m) Lentiviral Particles: sc-39288-V as alternate gene silencing products.

For independent verification of AGRP (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-39288A, sc-39288B and sc-39288C.

PROTOCOLS

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

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

AGRP siRNA (m) is recommended for the inhibition of AGRP expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor AGRP gene expression knockdown using RT-PCR Primer: AGRP (m)-PR: sc-39288-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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