SANTA CRUZ BIOTECHNOLOGY, INC.

SMAP1 siRNA (h): sc-95497

BACKGROUND

SMAP1 (stromal membrane-associated protein 1), also known as small ArfGAP 1, is a 467 amino acid peripheral membrane protein that localizes to the cytoplasmic side of the cell membrane where it participates in clathrin-dependent endocytosis. A GTPase activating protein for ARF6, SMAP1 is widely expressed in tissues such as lymph node, spinal cord, bone marrow, adrenal gland, trachea, stomach,thyroid and embryonic hematopoietic tissues. Containing one Arf-GAP domain, SMAP1 exists as multiple isoforms as a result of alternative splicing events and is encoded by a gene that maps to human chromosome 6q13. Human chromosome 6 contains 170 million base pairs, comprises nearly 6% of the human genome and is associated with Parkinson's disease, Stickler syndrome and a susceptibility to bipolar disorder.

REFERENCES

1. Brunner, H.G., et al. 1994. A Stickler syndrome gene is linked to chromosome 6 near the COL11A2 gene. Hum. Mol. Genet. 3: 1561-1564.
2. Sato, Y., et al. 1998. Involvement of stromal membrane-associated protein (SMAP-1) in erythropoietic microenvironment. J. Biochem. 124: 209-216.
3. Obinata, M., Yanai, N. 1999. Cellular and molecular regulation of an erythropoietic inductive microenvironment (EIM). Cell Struct. Funct. 24: 171-179.
4. Marcos, I., et al. 2002. Cloning, characterization and chromosome mapping of the human SMAP1 gene. Gene 292: 167-171.
5. Cesari, R., et al. 2003. Parkin, a gene implicated in autosomal recessive juvenile parkinsonism, is a candidate tumor suppressor gene on chromosome 6q25-q27. Proc. Natl. Acad. Sci. USA 100: 5956-5961.
6. Barragan, I., et al. 2005. Mutation screening of three candidate genes, ELOVL5, SMAP1 and GLULD1 in autosomal recessive retinitis pigmentosa. Int. J. Mol. Med. 16: 1163-1167.
7. Tanabe, K., et al. 2005. A novel GTPase-activating protein for ARF6 directly interacts with clathrin and regulates clathrin-dependent endocytosis. Mol. Biol. Cell 16: 1617-1628.

CHROMOSOMAL LOCATION

Genetic locus: SMAP1 (human) mapping to 6q13.

PRODUCT

SMAP1 siRNA (h) 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 SMAP1 shRNA Plasmid (h): sc-95497-SH and SMAP1 shRNA (h) Lentiviral Particles: sc-95497-V as alternate gene silencing products.

For independent verification of SMAP1 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-95497A, sc-95497B and sc-95497C.

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

SMAP1 siRNA (h) is recommended for the inhibition of SMAP1 expression in human 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.

GENE EXPRESSION MONITORING

SMAP1 (D-3): sc-390553 is recommended as a control antibody for monitoring of SMAP1 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SMAP1 gene expression knockdown using RT-PCR Primer: SMAP1 (h)-PR: sc-95497-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.