SANTA CRUZ BIOTECHNOLOGY, INC.

ACP2 siRNA (m): sc-140821

BACKGROUND

ACP2 (acid phosphatase 2), also known as LAP (lysosomal acid phosphatase), is a 423 amino acid member of the histidine acid phosphatase family. Localized to the lysosomal compartment, ACP2 is comprised of two subunits, designated α and β, which function to hydrolyze orthophosphoric monoesters to alcohols and phosphates. ACP2 is expressed throughout the body and exerts optimal enzymatic activity when the lysosome is at an acidic pH. Defects in the gene encoding ACP2 are the cause of acid phosphatase deficiency, a condition characterized by terminal bleeding, opisthotonos, hypotonia, lethargy, intermittent vomiting and death in early infancy.

REFERENCES

1. Pohlmann, R., et al. 1988. Human lysosomal acid phosphatase: cloning, expression and chromosomal assignment. EMBO J. 7: 2343-2350.
2. Geier, C., et al. 1989. Structure of the human lysosomal acid phosphatase gene. Eur. J. Biochem. 183: 611-616.
3. Whitelock, R.B., et al. 1997. Cathepsin G, acid phosphatase, and α 1-proteinase inhibitor messenger RNA levels in keratoconus corneas. Invest. Ophthalmol. Vis. Sci. 38: 529-534.
4. Branco, M., et al. 1998. Genetic polymorphism of rabbit *(Oryctolagus cuniculus)* tissue acid phosphatases (ACP2 and ACP3). Comp. Biochem. Physiol. B, Biochem. Mol. Biol. 120: 405-409.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 171650. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Mannan, A.U., et al. 2004. Mutation in the gene encoding lysosomal acid phosphatase (ACP2) causes cerebellum and skin malformation in mouse. Neurogenetics 5: 229-238.

CHROMOSOMAL LOCATION

Genetic locus: Acp2 (mouse) mapping to 2 E1.

PRODUCT

ACP2 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 ACP2 shRNA Plasmid (m): sc-140821-SH and ACP2 shRNA (m) Lentiviral Particles: sc-140821-V as alternate gene silencing products.

For independent verification of ACP2 (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-140821A, sc-140821B and sc-140821C.

RESEARCH USE

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

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

ACP2 siRNA (m) is recommended for the inhibition of ACP2 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 ACP2 gene expression knockdown using RT-PCR Primer: ACP2 (m)-PR: sc-140821-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.