SANTA CRUZ BIOTECHNOLOGY, INC.

IAP siRNA (h): sc-72032

BACKGROUND

The intestinal alkaline phosphatase gene (ALPI) encodes a digestive brush-border enzyme, IAP (also designated ALP), which is highly upregulated during small intestinal epithelial cell differentiation. IAP, an enterocyte differentiation marker that functions to limit fat absorption, has been implicated in transcellular transport of chylomicrons and in chylomicron formation. At high pH, IAP removes phosphate groups from proteins and from the 5' end of DNA and RNA. Most mammals have four different IAP isozymes: placental, placental-like, intestinal and non tissue-specific. Non tissue-specific isozymes are found in liver, kidney and bone. Tissues with particularly high concentrations of IAP include the liver, bile ducts, placenta and bone. Damaged or diseased tissue releases enzymes into the blood, so serum IAP measurements can be abnormal in many conditions, including bone disease and liver disease. Serum IAP levels vary among ABO blood groups, and fatty acid metabolism may change among ABO blood types. Intestinal alkaline phosphatase is more prevalent in humans of blood group O or B.

REFERENCES

1. Cordell, J.L., et al. 1984. Immunoenzymatic labeling of monoclonal antibodies using immune complexes of alkaline phosphatase and monoclonal anti-alkaline phosphatase. J. Histochem. Cytochem. 32: 219-229.
2. Lai, A.P., et al. 1985. Bone marrow macrophages and megakaryocytes express common acute lymphoblastic leukaemia antigen. Leuk. Res. 9: 1155-1159.
3. Moss, F.M., et al. 1988. Detection of small cell carcinoma in bone marrow aspirates using monoclonal antibodies and mixtures of monoclonal antibodies. Lung Cancer 4: 76-78.
4. Cho, S.R., et al. 2005. Unusually high alkaline phosphatase due to intestinal isoenzyme in a healthy adult. Clin. Chem. Lab. Med. 43: 1274-1275.
5. Olsen, L., et al. 2005. Differentiation-dependent activation of the human intestinal alkaline phosphatase promoter by HNF-4 in intestinal cells. Am. J. Physiol. Gastrointest. Liver Physiol. 289: G220-G226.
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CHROMOSOMAL LOCATION

Genetic locus: ALPI (human) mapping to 2q37.1.

PRODUCT

IAP siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see IAP shRNA Plasmid (h): sc-72032-SH and IAP shRNA (h) Lentiviral Particles: sc-72032-V as alternate gene silencing products.

For independent verification of IAP (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3 nmol of lyophilized siRNA. These include: sc-72032A, sc-72032B and sc-72032C.

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

IAP siRNA (h) is recommended for the inhibition of IAP 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

IAP (AAP.1): sc-56917 is recommended as a control antibody for monitoring of IAP 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 (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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 goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor IAP gene expression knockdown using RT-PCR Primer: IAP (h)-PR: sc-72032-PR (20 µl, 512 bp). 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.