SANTA CRUZ BIOTECHNOLOGY, INC.

ILBP siRNA (m): sc-41242

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The Power to Question

BACKGROUND

The fatty acid binding protein (FABP) family of cytoplasmic hydrophobic ligand binding proteins influence lipid metabolism by binding and transporting long-chain fatty acids. Ileal lipid binding protein (ILBP) is a cytosolic ileocyte FABP that binds to both bile acids and fatty acids thereby mediating active uptake of bile acid in the ileum. Transport of bile acids from the liver is essential for the solubilization and transport of dietary lipids. ILBP contains ten antiparallel β strands arranged in two nearly orthogonal β sheets (β clam shell), covered on one side by two short, nearly parallel a helices. Binding of fatty acids or bile acids to ILBP alters the side-chain proton resonances of amino acids within the protein cavity and increases the affinity of ILBP for bile acids; bile acid binding to ILBP is a positive-feedback regulation mechanism. The human ILBP gene maps to position 5q35, with transcript being abundant in the small intestine.

REFERENCES

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2. Lucke, C., et al. 1996. Flexibility is a likely determinant of binding specificity in the case of ileal lipid binding protein. Structure 4: 785-800.
3. Borchers, T., et al. 1997. Heart-type fatty acid binding protein-involvement in growth inhibition and differentiation. Prostaglandins Leukot. Essent. Fatty Acids 57: 77-84.
4. Kramer, W., et al. 1998. Intestinal absorption of bile acids: paradoxical behaviour of the 14 kDa ileal lipid-binding protein in differential photoaffinity labelling. Biochem. J. 333: 335-341.
5. Lucke, C., et al. 1999. A comparative study of the backbone dynamics of two closely related lipid binding proteins: bovine heart fatty acid binding protein and porcine ileal lipid binding protein. Mol. Cell. Biochem. 192: 109-121.
6. Grober, J., et al. 1999. Identification of a bile acid-responsive element in the human ileal bile acid-binding protein gene. Involvement of the farnesoid X receptor/9-*cis*-retinoic acid receptor heterodimer. J. Biol. Chem. 274: 29749-29754.
7. Lucke, C., et al. 2000. Solution structure of ileal lipid binding protein in complex with glycocholate. Eur. J. Biochem. 267: 2929-2938.
8. Kramer, W., et al. 2001. Identification of the bile acid-binding site of the ileal lipid-binding protein by photoaffinity labeling, matrix-assisted laser desorption ionization-mass spectrometry, and NMR structure. J. Biol. Chem. 276: 7291-7301.
9. Barley, N.F., et al. 2003. Human ileal bile acid-binding protein promoter and the effects of CDX2. Biochim. Biophys. Acta 1630: 138-143.

CHROMOSOMAL LOCATION

Genetic locus: Fabp6 (mouse) mapping to 11 B1.1.

RESEARCH USE

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

PRODUCT

ILBP 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 ILBP shRNA Plasmid (m): sc-41242-SH and ILBP shRNA (m) Lentiviral Particles: sc-41242-V as alternate gene silencing products.

For independent verification of ILBP (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-41242A, sc-41242B and sc-41242C.

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

ILBP siRNA (m) is recommended for the inhibition of ILBP 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.

GENE EXPRESSION MONITORING

ILBP (E-9): sc-515609 is recommended as a control antibody for monitoring of ILBP 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.