SANTA CRUZ BIOTECHNOLOGY, INC.

LAX1 siRNA (h): sc-88833

BACKGROUND

LAX1 (lymphocyte transmembrane adaptor 1), also known as LAX, linker for activation of X cells or membrane-associated adapter protein LAX, is a 398 amino acid single-pass type III membrane protein that negatively regulates lymphocyte signaling. LAX1 is expressed in lymphoid tissues including thymus, spleen and peripheral blood leukocytes, along with several B-cell, T-cell, natural killer and monocyte cell lines. When stimulated by B or T cells, LAX1 becomes dramatically upregulated and also interacts with GRB2, Gads and PI 3-kinase p85 upon phosphorylation. LAX1 exists as two alternatively spliced isoforms that are encoded by a gene located on human chromosome 1q32.1. Chromosome 1 houses a large number of disease-associated genes, including those that are involved in familial adenomatous polyposis, Stickler syndrome, Parkinson's disease, Gaucher disease, schizophrenia and Usher syndrome.

REFERENCES

1. Eudy, J.D., Yao, S., Weston, M.D., Ma-Edmonds, M., Talmadge, C.B., Cheng, J.J., Kimberling, W.J. and Sumegi, J. 1998. Isolation of a gene encoding a novel member of the nuclear receptor superfamily from the critical region of Usher syndrome type IIa at 1q41. Genomics 50: 382-384.
2. Eudy, J.D., Weston, M.D., Yao, S., Hoover, D.M., Rehm, H.L., Ma-Edmonds, M., Yan, D., Ahmad, I., Cheng, J.J., Ayuso, C., Cremers, C., Davenport, S., Moller, C., Talmadge, C.B., Beisel, K.W., Tamayo, M., Morton, C.C., et al. 1998. Mutation of a gene encoding a protein with extracellular matrix motifs in Usher syndrome type IIa. Science 280: 1753-1757.
3. Tayebi, N., Callahan, M., Madike, V., Stubblefield, B.K., Orvisky, E., Krasnewich, D., Fillano, J.J. and Sidransky, E. 2001. Gaucher disease and parkinsonism: a phenotypic and genotypic characterization. Mol. Genet. Metab. 73: 313-321.
4. Zhu, M., Janssen, E., Leung, K. and Zhang, W. 2002. Molecular cloning of a novel gene encoding a membrane-associated adaptor protein (LAX) in lymphocyte signaling. J. Biol. Chem. 277: 46151-46158.
5. Zhu, M., Granillo, O., Wen, R., Yang, K., Dai, X., Wang, D. and Zhang, W. 2005. Negative regulation of lymphocyte activation by the adaptor protein LAX. J. Immunol. 174: 5612-5619.
6. Shapiro, M.J., Nguyen, C.T., Aghajanian, H., Zhang, W. and Shapiro, V.S. 2008. Negative regulation of TCR signaling by linker for activation of X cells via phosphotyrosine-dependent and -independent mechanisms. J. Immunol. 181: 7055-7061.
7. Betarbet, R., Anderson, L.R., Gearing, M., Hodges, T.R., Fritz, J.J., Lah, J.J. and Levey, A.I. 2008. Fas-associated factor 1 and Parkinson's disease. Neurobiol. Dis. 31: 309-315.

CHROMOSOMAL LOCATION

Genetic locus: LAX1 (human) mapping to 1q32.1.

PROTOCOLS

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

PRODUCT

LAX1 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 LAX1 shRNA Plasmid (h): sc-88833-SH and LAX1 shRNA (h) Lentiviral Particles: sc-88833-V as alternate gene silencing products.

For independent verification of LAX1 (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-88833A, sc-88833B and sc-88833C.

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

LAX1 siRNA (h) is recommended for the inhibition of LAX1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor LAX1 gene expression knockdown using RT-PCR Primer: LAX1 (h)-PR: sc-88833-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.