SANTA CRUZ BIOTECHNOLOGY, INC.

Oasl1 siRNA (m): sc-150147

BACKGROUND

The 2'-, 5'-oligoadenylate synthetases (OASs) are interferon-induced proteins that play a putative role in mediating resistance to virus infection, control of cell growth, differentiation and apoptosis. OAS1, which functions as a homotetramer, is characterized by its capacity to catalyze the synthesis of 2'-, 5'-oligomers of adenosine (2-5As). OAS1 is also important in evaluating the interferon response in RNAi studies and is implicated in diabetes mellitus susceptibility. OASL1 (2',5'-oligoadenylate synthetase-like 1) is an enzyme that, due to the evolutionary loss of its 2-5A synthetase activity, is suspected to have a novel function independent of 2-5A synthesis. OASL2 has both enzymatic activity and a ubquitin-like domain, acting as a functional intermediate between the active OAS species and the inactive OASL1.

REFERENCES

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2. Justesen, J., Hartmann, R. and Kjeldgaard, N.O. 2000. Gene structure and function of the 2'-5'-oligoadenylate synthetase family. Cell. Mol. Life Sci. 57: 1593-1612.
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8. Sarkar, S.N., Kessler, S.P., Rowe, T.M., Pandey, M., Ghosh, A., Elco, C.P., Hartmann, R., Pal, S. and Sen, G.C. 2005. Natural mutations in a 2'-5'-oligoadenylate synthetase transgene revealed residues essential for enzyme activity. Biochemistry 44: 6837-6843.

CHROMOSOMAL LOCATION

Genetic locus: Oasl1 (mouse) mapping to 5 F.

PROTOCOLS

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

PRODUCT

Oasl1 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 Oasl1 shRNA Plasmid (m): sc-150147-SH and Oasl1 shRNA (m) Lentiviral Particles: sc-150147-V as alternate gene silencing products.

For independent verification of Oasl1 (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-150147A, sc-150147B and sc-150147C.

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

Oasl1 siRNA (m) is recommended for the inhibition of Oasl1 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 Oasl1 gene expression knockdown using RT-PCR Primer: Oasl1 (m)-PR: sc-150147-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zhan, Y., Xu, D., Tian, Y., Qu, X., Sheng, M., Lin, Y., Ke, M., Jiang, L., Xia, Q., Kaldas, F.M., Farmer, D.G. and Ke, B. 2022. Novel role of macrophage TXNIP-mediated CYLD-NRF2-OASL1 axis in stress-induced liver inflammation and cell death. JHEP Rep. 4: 100532.

RESEARCH USE

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