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SANTA CRUZ BIOTECHNOLOGY, INC.

Oas1b siRNA (m): sc-150141

BACKGROUND

The 2'-, 5'-oligoadenylate synthetases (OASs) are interferon-induced proteins that play a putative role in mediating resistance to viral infection, control of cell growth, differentiation and apoptosis. Oas1b (2'-5' oligoadenylate synthetase 1b), also known as L1, Flv, Wnv, Oas1, Oias2 or Mmu-L1, is a 251 amino acid murine protein belonging to the 2-5A synthase family. Induced by interferons, Oas1b binds double-stranded RNA and polymerizes ATP into PPP(A2'P5'A)N oligomers, activating latent RNase L. When acitvated, RNase L cleaves single-stranded RNAs, which lead to the inhibition of cellular protein synthesis and the impairment of viral replication. Oas1b is thought to mediate resistance to flaviviruses, such as West Nile virus, by preventing viral RNA accumulation during the early stages of the viral life cycle.

REFERENCES

1. Kumar, S., et al. 2000. Expansion and molecular evolution of the interferon-induced 2'-5'-oligoadenylate synthetase gene family. Mol. Biol. Evol. 17: 738-750.
2. Eskildsen, S., et al. 2002. Gene structure of the murine 2'-5'-oligoadenylate synthetase family. Cell. Mol. Life Sci. 59: 1212-1222.
3. Kakuta, S., et al. 2002. Genomic structure of the mouse 2',5'-oligoadenylate synthetase gene family. J. Interferon Cytokine Res. 22: 981-993.
4. Perelygin, A.A., et al. 2002. Positional cloning of the murine flavivirus resistance gene. Proc. Natl. Acad. Sci. USA 99: 9322-9327.
5. Samuel, C.E. 2002. Host genetic variability and West Nile virus susceptibility. Proc. Natl. Acad. Sci. USA 99: 11555-11557.
6. Mashimo, T., et al. 2003. Structural and functional genomics and evolutionary relationships in the cluster of genes encoding murine 2',5'-oligoadenylate synthetases. Genomics 82: 537-552.

CHROMOSOMAL LOCATION

Genetic locus: Oas1b (mouse) mapping to 5 F.

PRODUCT

Oas1b 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 Oas1b shRNA Plasmid (m): sc-150141-SH and Oas1b shRNA (m) Lentiviral Particles: sc-150141-V as alternate gene silencing products.

For independent verification of Oas1b (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-150141A, sc-150141B and sc-150141C.

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

Oas1b siRNA (m) is recommended for the inhibition of Oas1b 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 Oas1b gene expression knockdown using RT-PCR Primer: Oas1b (m)-PR: sc-150141-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.