

OAS2 siRNA (h): sc-61243

BACKGROUND

The 2'-5' oligoadenylate synthetase (OAS) family is comprised of four members: OAS1, OAS2, OAS3 and OASL. These proteins are induced by interferons and function to convert ATP into 2'-5' linked oligomers of adenosine in the presence of double-stranded RNA and magnesium ions. Copper, iron and zinc ions strongly inhibit the OAS enzymatic activity, while manganese ions can replace magnesium ions as an activator. The OAS family plays a significant role in the inhibition of cellular protein synthesis as well as in viral infection resistance. OAS2, which represents the "medium form" in the OAS family, maps to human chromosome 12q24.13. OAS2 contains two OAS1-homologous domains separated by a proline-rich putative linker region. It is functionally active as a dimer. Abnormal expression patterns of OAS2 may be linked to infection flare in lupus patients.

REFERENCES

- Corrias, M.V., et al. 1995. Induction of 2.5 OAS gene expression and activity is not sufficient for IFN- γ -induced neuroblastoma cell differentiation. *Int. J. Cancer* 62: 223-229.
- Hartmann, R., et al. 2001. Inhibition of 2'-5' oligoadenylate synthetase by divalent metal ions. *FEBS Lett.* 507: 54-58.
- Kakuta, S., et al. 2002. Genomic structure of the mouse 2'-5' oligoadenylate synthetase gene family. *J. Interferon Cytokine Res.* 22: 981-993.
- Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 603350. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Esildsen, S., et al. 2003. Characterization of the 2'-5' oligoadenylate synthetase ubiquitin-like family. *Nucleic Acids Res.* 31: 3166-3173.
- Nakajima, H., et al. 2003. Antiviral actions and viral dynamics in the early phase of three different regimens of interferon treatment for chronic hepatitis C: differences between the twice-daily administration of interferon- β treatment and the combination therapy with interferon- α plus ribavirin. *Acta Med. Okayama* 57: 217-225.
- Torshin, I.Y. 2005. Three-dimensional models of human 2'-5' oligoadenylate synthetases: a new computational method for reconstructing an enzyme assembly. *Med. Sci. Monit.* 11: 235-247.

CHROMOSOMAL LOCATION

Genetic locus: OAS2 (human) mapping to 12q24.13.

PRODUCT

OAS2 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see OAS2 shRNA Plasmid (h): sc-61243-SH and OAS2 shRNA (h) Lentiviral Particles: sc-61243-V as alternate gene silencing products.

For independent verification of OAS2 (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-61243A, sc-61243B and sc-61243C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

OAS2 siRNA (h) is recommended for the inhibition of OAS2 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 μ M in 66 μ l. 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

OAS2 (G-9): sc-271117 is recommended as a control antibody for monitoring of OAS2 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor OAS2 gene expression knockdown using RT-PCR Primer: OAS2 (h)-PR: sc-61243-PR (20 μ l, 428 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.

PROTOCOLS

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