SANTA CRUZ BIOTECHNOLOGY, INC.

OAS1 (18-K): sc-100639

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 homo-tetramer, is characterized by its capacity to catalyze the synthesis of 2'-, 5'-oligomers of adenosine (2-5As). OAS1 binds double-stranded RNA and polymerizes ATP into PPP(A2'P5'A)N oligomers, activating latent RNase L which, when activated, cleaves single-stranded RNAs. This RNase L activity leads to the inhibition of cellular protein synthesis and the impairment of viral replication. OAS1, a 400 amino acid containing protein, is also important in evaluating the interferon response in RNAi studies, and is implicated in diabetes mellitus susceptibility.

REFERENCES

1. Benech, P., et al. 1986. Structure of two forms of the interferon-induced 2'-, 5'- oligo A synthetase of human cells based on cDNAs and gene sequences. EMBO J. 4: 2249-2256.
2. 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.
3. Hovnanian, A., et al. 1998. The human 2'-, 5'- oligoadenylate synthetase locus is composed of three distinct genes clustered on chromosome 12q24.2 encoding the 100, 69, and 40 kDa forms. Genomics 52: 267-277.
4. Ghosh, A., et al. 2001. A specific isozyme of 2'-, 5'- oligoadenylate synthetase is a dual function proapoptotic protein of the Bcl-2 family. J. Biol. Chem. 276: 25447-25455.
5. Eskildsen, S., et al. 2003. Characterization of the 2'-, 5'- oligoadenylate synthetase ubiquitin-like family. Nucleic Acids Res. 31: 3166-3173.
6. Bonnevie-Nielsen, V., et al. 2005. Variation in antiviral 2'-, 5'- oligoadenylate synthetase (2'5'AS) enzyme activity is controlled by a single-nucleotide polymorphism at a splice-acceptor site in the OAS1 gene. Am. J. Hum. Genet. 76: 623-633.
7. Field, L.L., et al. 2005. OAS1 splice site polymorphism controlling antiviral enzyme activity influences susceptibility to type 1 diabetes. Diabetes 54: 1588-1591.

CHROMOSOMAL LOCATION

Genetic locus: OAS1 (human) mapping to 12q24.13.

SOURCE

OAS1 (18-K) is a mouse monoclonal antibody raised against recombinant OAS1 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

OAS1 (18-K) is recommended for detection of OAS1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

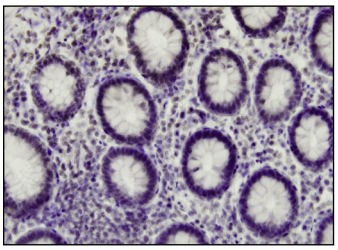
Suitable for use as control antibody for OAS1 siRNA (h): sc-61241, OAS1 shRNA Plasmid (h): sc-61241-SH and OAS1 shRNA (h) Lentiviral Particles: sc-61241-V.

Molecular Weight of OAS1: 46 kDa.

RECOMMENDED SUPPORT REAGENTS

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, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



OAS1 (18-K): sc-100639. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human colon tissue showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Saloura, V., et al. 2010. Evaluation of an attenuated vesicular stomatitis virus vector expressing interferon-β for use in malignant pleural mesothelioma: heterogeneity in interferon responsiveness defines potential efficacy. Hum. Gene Ther. 21: 51-64.
2. Hou, Z.H., et al. 2014. miR146a impairs the IFN-induced anti-HBV immune response by downregulating STAT1 in hepatocytes. Liver Int. 34: 58-68.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.