



# Oas1a (H-13): sc-49838

## 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 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. Oas1a is one of the known rodent homologs of human OAS1, which are thought to mediate cell growth, differentiation and apoptosis, as well as host resistance to viral infection.

## REFERENCES

1. Benech, P., Mory, Y., Revel, M. and Chebath, J. 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., Gribaudo, G., Guarnaccia, F. and Ponzoni, M. 1995. Induction of 2.5 OAS gene expression and activity is not sufficient for IFN- $\gamma$ -induced neuroblastoma cell differentiation. *Int. J. Cancer* 62: 223-229.
3. Hovnanian, A., Rebouillat, D., Mattei, M.G., Levy, E.R., Marie, I., Monaco, A.P. and Hovanessian, A.G. 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., Sarkar, S.N., Rowe, T.M. and Sen, G.C. 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., Justesen, J., Schierup, M.H. and Hartmann, R. 2003. Characterization of the 2', 5'- oligoadenylate synthetase ubiquitin-like family. *Nucleic Acids Res.* 31: 3166-3173.
6. Bonnevie-Nielsen, V., Field, L.L., Lu, S., Zheng, D.J., Li, M., Martensen, P.M., Nielsen, T.B., Beck-Nielsen, H., Lau, Y.L. and Pociot, F. 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., Bonnevie-Nielsen, V., Pociot, F., Lu, S., Nielsen, T.B. and Beck-Nielsen, H. 2005. OAS1 splice site polymorphism controlling antiviral enzyme activity influences susceptibility to type 1 diabetes. *Diabetes* 54: 1588-1591.
8. Hamano, E., Hijikata, M., Itoyama, S., Quy, T., Phi, N.C., Long, H.T., Ha, Ie D., Ban, V.V., Matsushita, I., Yanai, H., Kirikae, F., Kirikae, T., Kuratsuji, T., Sasazuki, T. and Keicho, N. 2005. Polymorphisms of interferon-inducible genes OAS-1 and MxA associated with SARS in the Vietnamese population. *Biochem. Biophys. Res. Commun.* 329: 1234-1239.
9. Cullen, B.R. 2006. Enhancing and confirming the specificity of RNAi experiments. *Nat. Methods* 3: 677-681.

## CHROMOSOMAL LOCATION

Genetic locus: OAS1 (human) mapping to 12q24.1.

## SOURCE

Oas1a (H-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Oas1a of mouse origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-49838 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-49838 X, 200  $\mu$ g/0.1 ml.

## APPLICATIONS

Oas1a (H-13) is recommended for detection of Oas1a of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (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 Oas1a siRNA (m): sc-150140, Oas1a shRNA Plasmid (m): sc-150140-SH and Oas1a shRNA (m) Lentiviral Particles: sc-150140-V.

Oas1a (H-13) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

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Molecular Weight of Oas1a: 46 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## STORAGE

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

## RESEARCH USE

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