

Oas1a (C-5): sc-374252



The Power to Question

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., et al. 1985. 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.

CHROMOSOMAL LOCATION

Genetic locus: Oas1a (mouse) mapping to 5 F.

SOURCE

Oas1a (C-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 337-369 near the C-terminus of Oas1a of mouse origin.

PRODUCT

Each vial contains 200 μ g IgG γ_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-374252 X, 200 μ g/0.1 ml.

Blocking peptide available for competition studies, sc-374252 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Oas1a (C-5) is recommended for detection of Oas1a of mouse origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], 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 (C-5) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

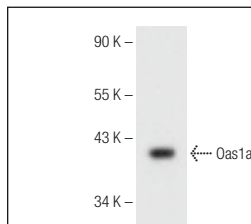
Molecular Weight of Oas1a: 46 kDa.

Positive Controls: mouse brain extract: sc-2253, mouse stomach extract: sc-394628 or BC₃H1 cell lysate: sc-2299.

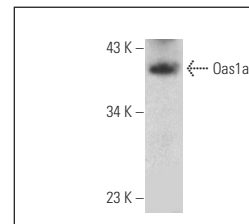
RECOMMENDED SUPPORT REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



Oas1a (C-5): sc-374252. Western blot analysis of Oas1a expression in BC₃H1 whole cell lysate.



Oas1a (C-5): sc-374252. Western blot analysis of Oas1a expression in mouse stomach tissue extract.

SELECT PRODUCT CITATIONS

1. Ishibashi, D., et al. 2019. Type I interferon protects neurons from prions in *in vivo* models. *Brain* 142: 1035-1050.

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.