

# OAS1 (F-3): sc-374656

## 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(A<sub>2</sub>P<sub>5</sub>A)<sub>N</sub> 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

OAS1 (F-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 337-364 at the C-terminus of OAS1 p41 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-374656 X, 200 µg/0.1 ml.

OAS1 (F-3) is available conjugated to agarose (sc-374656 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374656 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374656 PE), fluorescein (sc-374656 FITC), Alexa Fluor® 488 (sc-374656 AF488), Alexa Fluor® 546 (sc-374656 AF546), Alexa Fluor® 594 (sc-374656 AF594) or Alexa Fluor® 647 (sc-374656 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374656 AF680) or Alexa Fluor® 790 (sc-374656 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-374656 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## APPLICATIONS

OAS1 (F-3) is recommended for detection of OAS1 p41 isoform of human origin by Western Blotting (starting dilution 1:100, 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) 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.

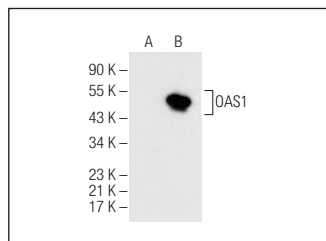
OAS1 (F-3) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of OAS1: 46 kDa.

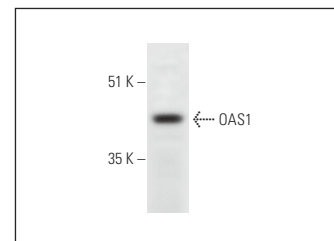
## STORAGE

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

## DATA



OAS1 (F-3): sc-374656. Western blot analysis of OAS1 expression in non-transfected (A) and human OAS1 transfected (B) HEK293T whole cell lysates.



OAS1 (F-3): sc-374656. Western blot analysis of OAS1 expression in HeLa whole cell lysate.

## SELECT PRODUCT CITATIONS

1. Yamane, D., et al. 2019. Basal expression of interferon regulatory factor 1 drives intrinsic hepatocyte resistance to multiple RNA viruses. *Nat. Microbiol.* 4: 1096-1104.
2. Kondratova, A.A., et al. 2020. Suppressing PARylation by 2',5'-oligoadenylate synthetase 1 inhibits DNA damage-induced cell death. *EMBO J.* 39: e101573.
3. Magg, T., et al. 2021. Heterozygous OAS1 gain-of-function variants cause an autoinflammatory immunodeficiency. *Sci. Immunol.* 6: eabf9564.
4. Yamaguchi, R., et al. 2022. IL-23 production in human macrophages is regulated negatively by tumor necrosis factor  $\alpha$ -induced protein 3 and positively by specificity protein 1 after stimulation of the toll-like receptor 7/8 signaling pathway. *Heliyon* 8: e08887.
5. Czerkies, M., et al. 2022. Respiratory syncytial virus protects bystander cells against influenza A virus infection by triggering secretion of type I and type III interferons. *J. Virol.* 96: e0134122.
6. Grabowski, F., et al. 2023. Antagonism between viral infection and innate immunity at the single-cell level. *PLoS Pathog.* 19: e1011597.
7. Wang, R., et al. 2023. Characterization of the impact of merkel cell polyomavirus-induced interferon signaling on viral infection. *J. Virol.* 97: e0190722.
8. Li, J., et al. 2023. Porcine reproductive and respiratory syndrome virus degrades DDX10 via SQSTM1/p62-dependent selective autophagy to antagonize its antiviral activity. *Autophagy* 19: 2257-2274.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.