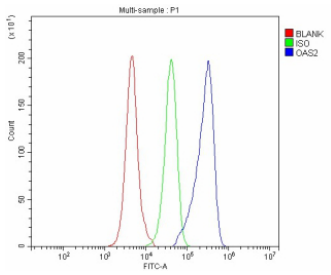
Oas2 Antibody / 2-5-Oligoadenylate synthetase 2 (FY13390)

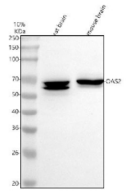
Catalog No.	Formulation	Size
FY13390	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Mouse, Rat
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	E9Q9A9
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This Oas2 antibody is available for research use only.



Flow Cytometry analysis of mouse RAW264.7 cells using anti-Oas2 antibody. Overlay histogram showing RAW264.7 cells stained with (Blue line). The cells were fixed with 4% paraformaldehyde and blocked with 10% normal goat serum. And then incubated with rabbit anti-OAS2 antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.



Western blot analysis of Oas2 using anti-OAS2 antibody. Lane 1: rat brain tissue lysates, Lane 2: mouse brain tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-OAS2 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using enhanced chemiluminescent. A strong band was detected at ~65 kDa, which is lower than the predicted 82 kDa and consistent with known shorter OAS2 isoforms reported in rodent tissues. Rat brain additionally showed a prominent lower-molecular-weight band, representing a documented truncated isoform or proteolytic fragment of Oas2.

Description

OAS2 antibody detects 2'-5'-oligoadenylate synthetase 2, a double-stranded RNA-activated enzyme encoded by the OAS2 gene located on chromosome 12q24.13. OAS2 plays a central role in the innate immune response to viral infection by synthesizing 2'-5'-linked oligoadenylates (2-5A) upon activation by viral double-stranded RNA. These 2-5A molecules subsequently activate RNase L, leading to degradation of viral and cellular RNA and inhibition of viral replication. OAS2 is expressed in most tissues but is strongly upregulated in response to interferon signaling, particularly in immune cells such as macrophages, dendritic cells, and lymphocytes.

Structurally, OAS2 is a 113 kDa protein containing two functional OAS catalytic domains, allowing higher polymerization activity than other family members such as OAS1. It belongs to the 2'-5'-oligoadenylate synthetase family of nucleotidyltransferases, characterized by a conserved polymerase fold and dsRNA-binding motifs. OAS2 localizes to the cytoplasm, often associating with ribosomes and endoplasmic reticulum membranes where viral replication typically occurs.

Functionally, OAS2 acts as a critical antiviral effector enzyme in interferon-stimulated pathways. Upon recognition of viral RNA, OAS2 catalyzes ATP polymerization into 2-5A molecules that bind and activate latent RNase L. This leads to RNA cleavage, apoptosis of infected cells, and amplification of antiviral signaling. OAS2 also interacts with pattern recognition receptors such as MDA5 and RIG-I, coordinating interferon response cascades. In addition to antiviral defense, OAS2 influences immune regulation, apoptosis, and inflammatory cytokine expression.

OAS2 expression is strongly induced by type I and type III interferons. Genetic variants in OAS2 have been associated with altered susceptibility to viral infections including SARS-CoV-2, hepatitis C, and West Nile virus. Dysregulation of OAS2 can contribute to autoimmune disorders through excessive RNA degradation. Pathway associations include interferon signaling, RNA decay, and innate immune activation. During development, OAS2 expression in immune progenitors supports early antiviral competence.

The OAS2 antibody from NSJ Bioreagents is a valuable reagent for studying antiviral mechanisms, interferon signaling, and immune regulation.

Application Notes

Optimal dilution of the Oas2 antibody should be determined by the researcher.

Immunogen

E.coli-derived mouse Oas2 recombinant protein (Position: H35-K742) was used as the immunogen for the Oas2 antibody.

Storage

After reconstitution, the Oas2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.