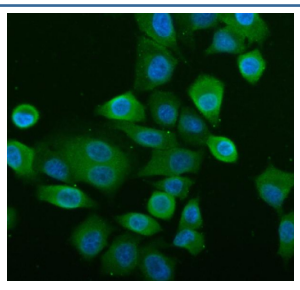
NLRP2 Antibody / NALP2 (FY12734)

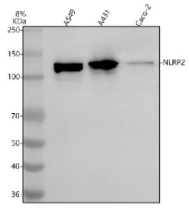
Catalog No.	Formulation	Size
FY12734	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

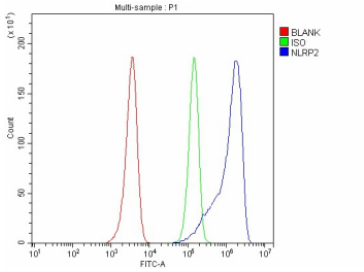
Availability	1-2 days
Species Reactivity	Human
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q9NX02
Localization	Cytoplasm
Applications	ELISA : 0.1-0.5ug/ml Flow Cytometry : 1-3ug/million cells Immunoprecipitation : 2-4ug/500ug of lysate Immunofluorescence : 5ug/ml Immunocytochemistry : 5ug/ml Western Blot : 0.25-0.5ug/ml
Limitations	This NLRP2 antibody is available for research use only.



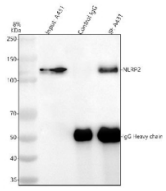
Immunofluorescent staining of NLRP2 using anti-NLRP2 antibody (green). NLRP2 was detected in an immunocytochemical section of cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/ml rabbit anti-NLRP2 antibody overnight at 4oC. DyLight 488 Conjugated Goat Anti-Rabbit IgG was used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. The section was counterstained with DAPI nuclear stain (blue). Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Western blot analysis of NLRP2 using anti-NLRP2 antibody. Lane 1: human whole cell lysates, Lane 2: human whole cell lysates, Lane 3: human Caco-2 whole cell 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-NLRP2 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 specific band was detected for NLRP2 at approximately 121 kDa. The expected molecular weight of NLRP2 is ~121 kDa.



Flow Cytometry analysis of HEL cells using anti-NLRP2 antibody. Overlay histogram showing HEL cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-NLRP2 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.



Immunoprecipitating NLRP2 in whole cell lysate. Western blot analysis of NLRP2 using anti-NLRP2 antibody. Lane 1: whole cell lysates (30ug) Lane 2: Rabbit control IgG instead of anti-NLRP2 antibody in whole cell lysate. Lane 3: anti-NLRP2 antibody (2ug) + whole cell lysate (500ug) After electrophoresis, proteins were transferred to a membrane. Then the membrane was incubated with rabbit anti-NLRP2 antibody at a dilution of 0.5 ug/ml and probed with a goat anti-rabbit IgG-HRP secondary antibody. The signal is developed using ECL Plus Western Blotting Substrate. A specific band was detected for NLRP2 at approximately 121 kDa. The expected molecular weight of NLRP2 is at 121 kDa.

Description

NLRP2 antibody detects NACHT, LRR, and PYD domains-containing protein 2, an intracellular innate immune sensor that regulates inflammasome signaling, apoptosis, and embryonic development. Encoded by the NLRP2 gene on chromosome 19q13.42, this protein belongs to the NOD-like receptor (NLR) family characterized by an N-terminal pyrin domain (PYD), a central NACHT domain responsible for oligomerization, and C-terminal leucine-rich repeats (LRRs) involved in ligand sensing. NLRP2 acts as a cytoplasmic pattern-recognition receptor that modulates NF-kB and caspase-1 activation pathways, thereby influencing inflammatory cytokine production.

NLRP2 expression is found in oocytes, testis, brain, and immune tissues. In germ cells and early embryos, NLRP2 contributes to epigenetic regulation of imprinted gene expression and maintenance of zygotic genome integrity. Mutations in NLRP2 are associated with imprinting disorders such as Beckwith-Wiedemann and multilocus imprinting disturbances. In immune cells, NLRP2 serves as a negative regulator of inflammasome activity, limiting excessive IL-1beta secretion and preventing aberrant inflammation. Its dual role in reproduction and immunity underscores its importance in maintaining both developmental and immune homeostasis.

The NLRP2 antibody is used in immunology, developmental, and reproductive research to study inflammasome signaling and maternal effect gene function. Western blot analysis reveals a 115 kilodalton band, while immunofluorescence shows cytoplasmic and perinuclear staining consistent with inflammasome localization. The antibody helps characterize NLRP2's interactions with ASC and caspase-1 in immune signaling complexes. In reproductive studies, it assists in analyzing NLRP2's role in zygotic reprogramming and early embryonic gene activation. Loss or mutation of NLRP2 disrupts normal embryogenesis and can cause early developmental arrest.

In addition to its developmental and immunological roles, NLRP2 may contribute to cancer and neurological disease by modulating inflammation and apoptosis. Reduced expression is observed in gliomas and certain carcinomas, while overactivation of inflammasome signaling has been linked to neuroinflammation and tissue injury. The NLRP2 antibody thus supports research across multiple fields, from innate immunity to epigenetic regulation. NSJ Bioreagents provides this antibody validated for its applications to ensure specificity in both human and model systems.

Application Notes

Optimal dilution of the NLRP2 antibody should be determined by the researcher.

Immunogen

E.coli-derived human NLRP2 recombinant protein (Position: H80-D1044) was used as the immunogen for the NLRP2 antibody.

Storage

After reconstitution, the NLRP2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.