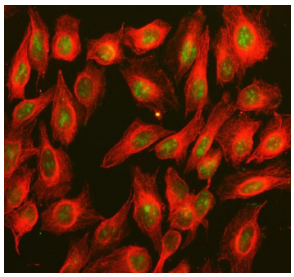
BOP1 Antibody / Block of proliferation 1 (FY12549)

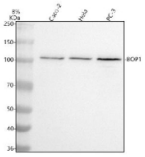
Catalog No.	Formulation	Size
FY12549	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

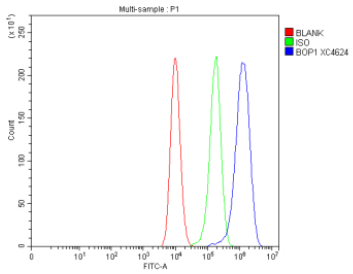
Availability	1-2 days
Species Reactivity	Human
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q14137
Applications	Western Blot: 0.25-0.5ug/ml Immunocytochemistry/Immunofluorescence: 5ug/ml Flow cytometry: 1-3ug/million cells ELISA: 0.1-0.5ug/ml
Limitations	This BOP1 antibody is available for research use only.



Immunofluorescent staining of BOP1 using anti-BOP1 antibody (green) and anti-Beta Tubulin antibody (red). BOP1 was detected in an immunocytochemical section of U2OS 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-BOP1 antibody and mouse anti-Beta Tubulin antibody overnight at 4oC. DyLight 488 Conjugated Goat Anti-Rabbit IgG and DyLight 594 Conjugated Goat Anti-Mouse IgG were used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Western blot analysis of BOP1 using anti-BOP1 antibody. Electrophoresis was performed on a 8% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human Caco-2 whole cell lysates, Lane 2: human Hela whole cell lysates, Lane 3: human PC-3 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-BOP1 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 an ECL Plus Western Blotting Substrate. BOP1 (~84 kDa predicted) was detected at ~100-110 kDa across multiple cell lysates, consistent with the known phosphorylation-dependent and charge-related upward migration of this nucleolar WD40-repeat protein.



Flow Cytometry analysis of CACO-2 cells using anti-BOP1 antibody. Overlay histogram showing CACO-2 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-BOP1 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.

Description

BOP1 antibody detects Block of proliferation 1 protein, a nucleolar factor that plays a central role in ribosome biogenesis, cell cycle regulation, and tumor progression. BOP1 forms part of the PeBoW complex (with PES1 and WDR12), which is required for maturation of the 28S and 5.8S ribosomal RNAs and assembly of the 60S ribosomal subunit. The BOP1 antibody is used in studies of ribosome formation, cellular proliferation, and oncogenic transformation.

BOP1 is encoded by the BOP1 gene located on human chromosome 8q24.3, a genomic region frequently amplified in cancers. The protein is approximately 80 kilodaltons and contains WD40 repeat motifs that mediate protein-protein interactions within the nucleolus. BOP1 functions as a structural scaffold coordinating pre-rRNA processing and ribonucleoprotein complex formation. Its proper activity is critical for balanced ribosome production and maintenance of genomic stability.

The BOP1 antibody detects a 100-110 kilodalton band by western blot and exhibits strong nucleolar localization by immunofluorescence. During ribosome assembly, BOP1 interacts with PES1 and WDR12 to stabilize preribosomal particles, ensuring efficient cleavage and processing of rRNA precursors. Loss of BOP1 results in accumulation of immature rRNA intermediates and nucleolar stress, leading to p53 activation and cell cycle arrest.

BOP1 also influences mitotic progression and centrosome duplication. Overexpression accelerates cell proliferation and promotes chromosomal instability, while depletion inhibits tumor cell growth. Dysregulation of BOP1 has been reported in colorectal, pancreatic, and hepatocellular carcinomas, correlating with poor prognosis and increased metastatic potential.

Because ribosome biogenesis is tightly linked to cell growth, BOP1 serves as a valuable biomarker for cancer diagnostics and as a potential target for anti-proliferative therapies. NSJ Bioreagents provides a validated BOP1 antibody optimized for western blot, immunofluorescence, and nucleolar imaging, supporting research into ribosomal RNA processing, nucleolar stress response, and oncogenic signaling pathways.

Application Notes

Optimal dilution of the BOP1 antibody should be determined by the researcher.

Immunogen

E.coli-derived human BOP1 recombinant protein (Position: R157-N701) was used as the immunogen for the BOP1 antibody.

Storage

After reconstitution, the BOP1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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