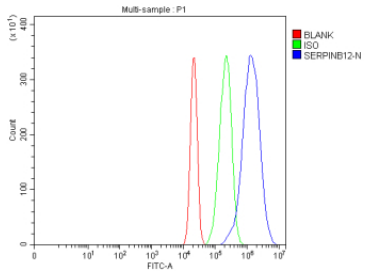
SERPINB12 Antibody / Serpin family B member 12 (FY12684)

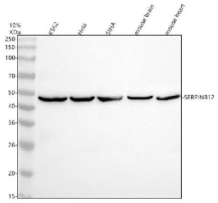
Catalog No.	Formulation	Size
FY12684	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse
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	Q96P63
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This SERPINB12 antibody is available for research use only.



Flow Cytometry analysis of RT4 cells using anti-SERPINB12 antibody. Overlay histogram showing RT4 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-SERPINB12 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 SERPINB12 using anti-SERPINB12 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human K562 whole cell lysates, Lane 2: human Hela whole cell lysates, Lane 3: human SIHA whole cell lysates, Lane 4: human U251 whole cell lysates, Lane 5: mouse brain tissue lysates, Lane 6: mouse heart 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-SERPINB12 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. A specific band was detected for SERPINB12 at approximately 46 kDa. The expected molecular weight of SERPINB12 is ~46 kDa.

Description

SERPINB12 antibody targets Serpin family B member 12, a cytoplasmic serine protease inhibitor belonging to the clade B (ovalbumin-like) subfamily of serpins. These intracellular serpins modulate proteolytic activity to maintain cellular homeostasis, control inflammation, and prevent premature cell death caused by uncontrolled protease action. SERPINB12, encoded by the SERPINB12 gene on chromosome 18q21.33, is expressed in epithelial tissues such as the liver, pancreas, kidney, and gastrointestinal tract. The protein functions primarily as an inhibitor of trypsin-like serine proteases, including granzyme B and trypsin, protecting cells from protease-mediated damage during stress or immune response.

Structurally, SERPINB12 consists of a conserved serpin fold comprising three beta-sheets and nine alpha-helices surrounding a reactive center loop (RCL). Upon cleavage by a target protease, SERPINB12 undergoes an irreversible conformational change that traps the enzyme in a covalent complex, neutralizing its activity. This suicide-inhibition mechanism is characteristic of the serpin family and critical for regulating proteolytic cascades within cells. In the pancreas and gastrointestinal tract, SERPINB12 prevents inappropriate activation of digestive enzymes that could cause tissue injury. In immune contexts, it protects epithelial cells against cytotoxic proteases released by immune effectors.

Beyond its role in protease inhibition, SERPINB12 has emerging significance in cancer biology and tissue homeostasis. Overexpression of SERPINB12 has been reported in hepatocellular carcinoma, pancreatic ductal adenocarcinoma, and colorectal cancer, where it may contribute to cell survival under inflammatory or proteolytic stress. Conversely, loss of SERPINB12 function has been associated with enhanced susceptibility to apoptosis and tissue injury. The SERPINB12 antibody is widely used in studies examining protease regulation, epithelial defense, and tumor biology. Immunohistochemistry with this antibody reveals cytoplasmic localization consistent with its role as an intracellular serpin. In biochemical assays, western blotting identifies a 42 kilodalton band corresponding to SERPINB12, confirming its specificity.

Functional studies have shown that SERPINB12 may cooperate with other serpins, such as SERPINB9 and SERPINB13, to establish a network of intracellular protease control in secretory epithelia. This redundancy ensures protection against multiple classes of serine proteases during inflammation or infection. In model systems, SERPINB12 expression is upregulated by cytokines and growth factors, suggesting regulation through stress-responsive pathways. The SERPINB12 antibody thus provides a valuable tool for mapping these protective responses and for characterizing epithelial resilience to proteolytic challenge. Its expression profile also makes it a potential biomarker for epithelial tumor progression and inflammation-associated pathology. NSJ Bioreagents supplies this antibody validated for its applications, supporting diverse studies of serpin-mediated protease regulation.

Application Notes

Optimal dilution of the SERPINB12 antibody should be determined by the researcher.

Immunogen

E.coli-derived human SERPINB12 recombinant protein (Position: H25-D306) was used as the immunogen for the SERPINB12 antibody.

Storage

After reconstitution, the SERPINB12 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.