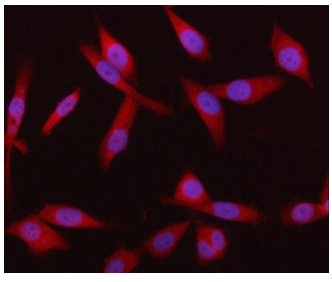
Synoviolin Antibody / SYVN1 / HRD1 (FY13401)

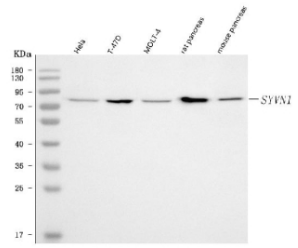
Catalog No.	Formulation	Size
FY13401	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

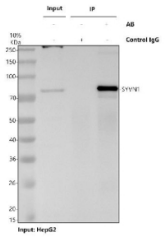
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q86TM6
Localization	Cytoplasm (ER)
Applications	Western Blot : 0.25-0.5ug/ml Immunocytochemistry/Immunofluorescence : 5 ug/ml Immunoprecipitation : 2ug per 500ug of lysate Flow Cytometry : 1-3ug/million cells
Limitations	This Synoviolin antibody is available for research use only.



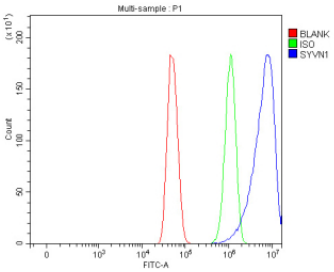
Immunofluorescent staining of FFPE human PC-3 cells with Synoviolin antibody (red) and DAPI nuclear stain (blue). HIER: steam section in pH6 citrate buffer for 20 min.



Western blot testing of 1) human HeLa, 2) human T-47D, 3) human MOLT4, 4) rat pancreas and 5) mouse pancreas tissue lysate with Synoviolin antibody. The predicted mass is ~68 kDa, but SYVN1 can migrate higher on SDS-PAGE due to membrane-protein behavior and post-translational modification and isoform heterogeneity.



Immunoprecipitation of Synoviolin protein from 500ug of human HepG2 whole cell lysate with 2ug of Synoviolin antibody.



Flow cytometry analysis of fixed and permeabilized human U-251 cells with Synoviolin antibody at 1ug/million cells (blocked with goat sera); Red=cells alone, Green=isotype control, Blue= Synoviolin antibody.

Description

Synoviolin antibody targets Synoviolin (SYVN1), also known as HRD1, an endoplasmic reticulum membrane-anchored E3 ubiquitin ligase that functions as a central component of the ER-associated degradation pathway. Synoviolin mediates the ubiquitination of misfolded or excess proteins within the endoplasmic reticulum, marking them for retrotranslocation and proteasomal degradation. The protein localizes predominantly to the ER membrane, where its cytosolic RING finger domain catalyzes ubiquitin transfer in coordination with E2 enzymes. Through this activity, Synoviolin plays a key role in maintaining ER protein quality control and cellular proteostasis.

Functionally, Synoviolin regulates ER homeostasis by limiting the accumulation of aberrant proteins that would otherwise trigger prolonged unfolded protein response signaling. By promoting efficient clearance of defective substrates, Synoviolin helps balance protein synthesis with folding capacity and prevents chronic ER stress. Synoviolin expression is broadly observed across tissues, reflecting the universal requirement for ER quality control in secretory and metabolically active cells. A Synoviolin antibody supports studies examining ubiquitin-dependent protein degradation and ER stress regulation.

Synoviolin has been implicated in controlling the stability of specific regulatory proteins involved in cell survival, inflammation, and metabolic signaling. Altered Synoviolin activity can influence cellular responses to stress by modulating degradation rates of ER-resident and ER-associated substrates. In experimental systems, changes in Synoviolin levels affect sensitivity to ER stressors and perturbations in protein folding demand, highlighting its role as a gatekeeper of ER proteostasis.

From a biological and disease-relevance perspective, Synoviolin has been studied in the context of inflammatory disease, fibrosis, and cancer biology, where dysregulated protein quality control contributes to pathogenesis. HRD1-mediated ERAD activity influences inflammatory signaling pathways and cell fate decisions under stress conditions. Understanding Synoviolin expression and regulation provides insight into how cells adapt to chronic ER stress and maintain homeostasis under pathological challenges.

At the molecular level, Synoviolin is encoded by the SYVN1 gene and produces a protein of approximately 617 amino acids. The protein contains multiple transmembrane domains anchoring it to the ER membrane and a cytosolic RING finger motif required for E3 ubiquitin ligase activity. Regulation of Synoviolin occurs through transcriptional control, protein interactions, and feedback from ER stress signaling pathways. A Synoviolin antibody supports research applications focused on ER-associated degradation, ubiquitin signaling, and cellular stress responses, with NSJ Bioreagents providing reagents intended for research use.

Application Notes

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

Immunogen

E.coli-derived human HRD1/SYVN1 recombinant protein (amino acids Q68-R604) was used as the immunogen for the Synoviolin antibody.

Storage

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