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SYVN1 (HRD1) Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP2184A

Product Information

Application	IF, WB, IHC-P, E
Primary Accession	Q86TM6
Other Accession	Q9DBY1, Q8N6E8
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	67685
Antigen Region	586-617

Additional Information

Gene ID	84447
Other Names	E3 ubiquitin-protein ligase synoviolin, 632-, Synovial apoptosis inhibitor 1, SYVN1, HRD1, KIAA1810
Target/Specificity	This SYVN1 (HRD1) antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 586-617 amino acids from the C-terminal region of human SYVN1 (HRD1).
Dilution	IF~~1:200 WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	SYVN1 (HRD1) Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	SYVN1 {ECO:0000303|PubMed:15489334}
Function	E3 ubiquitin-protein ligase which accepts ubiquitin specifically from endoplasmic reticulum-associated UBC7 E2 ligase and transfers it to substrates, promoting their degradation (PubMed:12459480,

PubMed:12646171, PubMed:12975321, PubMed:14593114, PubMed:16289116, PubMed:16847254, PubMed:17059562, PubMed:17141218, PubMed:17170702, PubMed:22607976, PubMed:27827840, PubMed:26471130, PubMed:28827405). Component of the endoplasmic reticulum quality control (ERQC) system also called ER-associated degradation (ERAD) involved in ubiquitin-dependent degradation of misfolded endoplasmic reticulum proteins (PubMed:12459480, PubMed:12646171, PubMed:12975321, PubMed:14593114, PubMed:16289116, PubMed:16847254, PubMed:17059562, PubMed:17141218, PubMed:17170702, PubMed:22607976, PubMed:26471130, PubMed:28842558). Also promotes the degradation of normal but naturally short-lived proteins such as SGK. Protects cells from ER stress-induced apoptosis. Protects neurons from apoptosis induced by polyglutamine- expanded huntingtin (HTT) or unfolded GPR37 by promoting their degradation (PubMed:17141218). Sequesters p53/TP53 in the cytoplasm and promotes its degradation, thereby negatively regulating its biological function in transcription, cell cycle regulation and apoptosis (PubMed:17170702). Mediates the ubiquitination and subsequent degradation of cytoplasmic NFE2L1 (By similarity). During the early stage of B cell development, required for degradation of the pre-B cell receptor (pre-BCR) complex, hence supporting further differentiation into mature B cells (By similarity).

Cellular Location Endoplasmic reticulum membrane; Multi-pass membrane protein

Tissue Location Ubiquitously expressed, with highest levels in liver and kidney (at protein level). Up-regulated in synovial tissues from patients with rheumatoid arthritis (at protein level)

Background

HRD1 is a ubiquitin ligase whose expression is induced by the unfolded protein response (UPR) following endoplasmic reticulum stress. Expression of HRD1 protects cells from apoptosis by inducing degradation of abnormally processed proteins that accumulate in the endoplasmic reticulum. HRD1 is expressed in many tissues, strongly expressed in brain, pancreas, liver, kidney and skeletal muscle. Amano T, et al. reported that Synoviolin/Hrd1 (expressed in rheumatoid synovium) is a novel causative factor for arthropathy by triggering synovial cell outgrowth through its antiapoptotic effects. HRD1 contains one ring-type zinc finger.

References

References for protein:
1.Kaneko M, FEBS Lett. 2002. 532: 147-152.
2.Amano T, et al. Genes Dev. 2003. 17: 2436-2449.

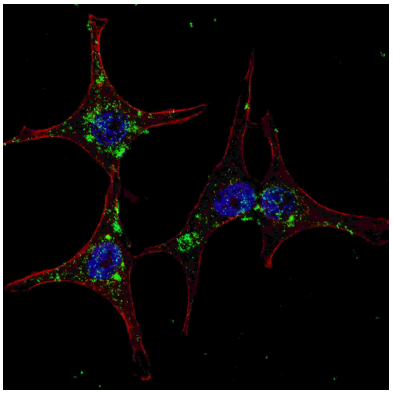
References for HeLa cell line:
1. Scherer WF, Syverton JT, Gey GO (May 1953). "Studies on the propagation in vitro of poliomyelitis viruses. IV. Viral multiplication in a stable strain of human malignant epithelial cells (strain HeLa) derived from an epidermoid carcinoma of the cervix". J. Exp. Med. 97 (5): 695–710. [PubMed:13052828].

2. Macville M, Schr ck E, Padilla-Nash H, Keck C, Ghadimi BM, Zimonjic D, Popescu N, Ried T (January 1999). "Comprehensive and definitive molecular cytogenetic characterization of HeLa cells by spectral karyotyping". Cancer Res. 59 (1): 141–50. [PubMed: 9892199].
3. Rahbari R, Sheahan T, Modes V, Collier P, Macfarlane C, Badge RM (April 2009). "A novel L1 retrotransposon marker for HeLa cell line identification". BioTechniques 46 (4): 277–84. [PubMed: 19450234].

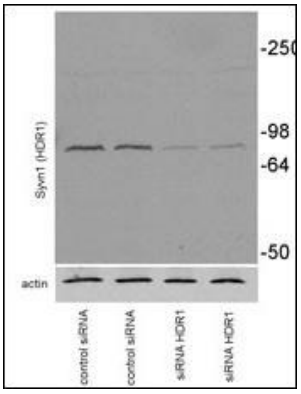
4. Capes-Davis A, Theodosopoulos G, Atkin I, Drexler HG, Kohara A, MacLeod RA, Masters JR, Nakamura Y, Reid YA, Reddel RR, Freshney RI (July 2010). "Check your cultures! A list of cross-contaminated or

misidentified cell lines". Int. J. Cancer 127 (1): 1–8. [PubMed:20143388].

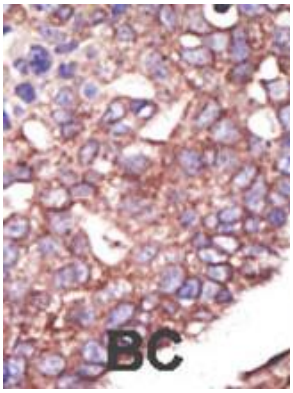
Images



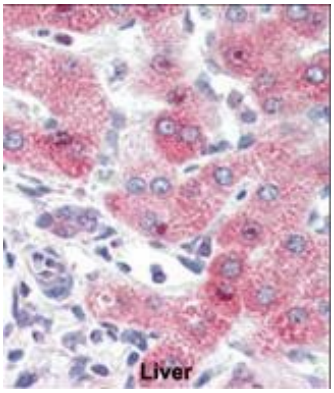
Fluorescent confocal image of HeLa cells stained with SYVN1 (HRD1) (C-term) antibody. HeLa cells were fixed with 4% PFA (20 min), permeabilized with Triton X-100 (0.2%, 30 min). Cells were then incubated with AP2184a SYVN1 (HRD1) (C-term) primary antibody (1:200, 2 h at room temperature). For secondary antibody, Alexa Fluor® 488 conjugated donkey anti-rabbit antibody (green) was used (1:1000, 1h). Nuclei were counterstained with Hoechst 33342 (blue) (10 µg/ml, 5 min).



Mouse Neuroblastoma Neuro2A (N2A) was transiently transfected, collected at 72h after transfection. Primary antibodies against syvn1 (Abgent # AP2184a, 1:1000) and anti-rabbit secondary POD-conjugated antibodies from Pierce Biotechnology, Inc (Rockford, IL, 1:2000)(Provided by Dr. Susana Granell & Institution University of Arkansas).



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.



Formalin-fixed and paraffin-embedded human Liver tissue reacted with SYVN1 (HRD1) Antibody (C-term)(Cat.#AP2184a), which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.

Citations

- Acute exposure to polystyrene nanoplastics induces unfolded protein response and global protein ubiquitination in lungs of mice
- STING regulates BCR signaling in normal and malignant B cells
- E3 ubiquitin ligase HRD1 modulates the circadian clock through regulation of BMAL1 stability
- Derlin-3 Is Required for Changes in ERAD Complex Formation under ER Stress
- UBR E3 ligases and the PDIA3 protease control degradation of unfolded antibody heavy chain by ERAD
- HRD1 prevents atherosclerosis-mediated endothelial cell apoptosis by promoting LOX-1 degradation
- The sterol-responsive RNF145 E3 ubiquitin ligase mediates the degradation of HMG-CoA reductase together with gp78 and Hrd1.
- Cytosolic Processing Governs TAP-Independent Presentation of a Critical Melanoma Antigen.
- HRD1 prevents apoptosis in renal tubular epithelial cells by mediating eIF2α ubiquitylation and degradation.
- HSP70-Hrd1 axis precludes the oncorepressor potential of N-terminal misfolded Blimp-1s in lymphoma cells.
- Familial prion protein mutants inhibit Hrd1-mediated retrotranslocation of misfolded proteins by depleting misfolded protein sensor BiP.
- Acute ER stress regulates amyloid precursor protein processing through ubiquitin-dependent degradation.
- Deglycosylation-dependent fluorescent proteins provide unique tools for the study of ER-associated degradation.
- Vacuolar-type H+-ATPase V1A subunit is a molecular partner of Wolfram syndrome 1 (WFS1) protein, which regulates its expression and stability.
- Ubiquitin ligase substrate identification through quantitative proteomics at both the protein and peptide levels.
- Cyclosporin A induces the unfolded protein response in keratinocytes.
- Loss of HRD1-mediated protein degradation causes amyloid precursor protein accumulation and amyloid-beta generation.
- Correlation between decrease in protein levels of ubiquitin ligase HRD1 and amyloid-beta production.
- An E3 ubiquitin ligase, Synoviolin, is involved in the degradation of immature nicastrin, and regulates the production of amyloid beta-protein.
- The unfolded protein response is activated in differentiating epidermal keratinocytes.
- Overexpression of synoviolin in peripheral blood and synoviocytes from rheumatoid arthritis patients and continued elevation in nonresponders to infliximab treatment.
- WFS1-deficiency increases endoplasmic reticulum stress, impairs cell cycle progression and triggers the apoptotic pathway specifically in pancreatic beta-cells.