



Synoviolin (h3): 293T Lysate: sc-170272

BACKGROUND

Ubiquitination is an important mechanism through which three classes of enzymes act in concert to target short-lived or abnormal proteins for destruction. The three classes of enzymes involved in ubiquitination are the ubiquitin-activating enzymes (E1s), the ubiquitin-conjugating enzymes (E2s) and the ubiquitin-protein ligases (E3s). Synoviolin, also known as SYVN1 (synovial apoptosis inhibitor 1) or HRD1, is a 617 amino acid multi-pass membrane protein that localizes to the endoplasmic reticulum and contains one RING-type zinc finger. Expressed ubiquitously with highest expression in kidney and liver, Synoviolin exists as a homodimer that exhibits E3 ubiquitin-protein ligase activity and is a component of the ER-associated degradation (ERAD) complex, a multi-protein structure that mediates the degradation of misfolded proteins within the ER. Synoviolin is upregulated in patients with rheumatoid arthritis (RA), suggesting a role for Synoviolin in the pathogenesis of RA.

REFERENCES

1. Kikkert, M., et al. 2004. Human HRD1 is an E3 ubiquitin ligase involved in degradation of proteins from the endoplasmic reticulum. *J. Biol. Chem.* 279: 3525-3534.
2. Lilley, B.N. and Ploegh, H.L. 2005. Multiprotein complexes that link dislocation, ubiquitination, and extraction of misfolded proteins from the endoplasmic reticulum membrane. *Proc. Natl. Acad. Sci. USA* 102: 14296-14301.
3. Yamasaki, S., et al. 2006. Resistance to endoplasmic reticulum stress is an acquired cellular characteristic of rheumatoid synovial cells. *Int. J. Mol. Med.* 18: 113-117.
4. Yamasaki, S., et al. 2007. The roles of Synoviolin in crosstalk between endoplasmic reticulum stress-induced apoptosis and p53 pathway. *Cell Cycle* 6: 1319-1323.
5. Hosokawa, N., et al. 2008. Human XTP3-B forms an endoplasmic reticulum quality control scaffold with the HRD1-Sel-1L ubiquitin ligase complex and BiP. *J. Biol. Chem.* 283: 20914-20924.
6. Cattaneo, M., et al. 2008. Sel-1L and HRD1 are involved in the degradation of unassembled secretory Ig- μ chains. *J. Cell. Physiol.* 215: 794-802.
7. Omura, T., et al. 2008. Novel functions of ubiquitin ligase HRD1 with transmembrane and proline-rich domains. *J. Pharmacol. Sci.* 106: 512-519.
8. Yagishita, N., et al. 2008. Synoviolin, protein folding and the maintenance of joint homeostasis. *Nat. Clin. Pract. Rheumatol.* 4: 91-97.

CHROMOSOMAL LOCATION

Genetic locus: SYVN1 (human) mapping to 11q13.1.

PRODUCT

Synoviolin (h3): 293T Lysate represents a lysate of human Synoviolin transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

Synoviolin (h3): 293T Lysate is suitable as a Western Blotting positive control for human reactive Synoviolin antibodies. Recommended use: 10-20 μ l per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.