

Product Information

Anti-HRD1/SYVN1 (C-terminal)

produced in rabbit, affinity isolated antibody

Product Number **H7915**

Product Description

Anti-HRD1/SYVN1 (C-terminal) is produced in rabbit using as immunogen a synthetic peptide corresponding to a sequence at the C-terminal of human HRD1/SYVN1 (GeneID: 84447), conjugated to KLH. The corresponding sequence differs by 2 amino acids in rat and mouse. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-HRD1/SYVN1 (C-terminal) recognizes human HRD1/SYVN1. The antibody may be used in immunoblotting (~70 kDa). Detection of the HRD1/SYVN1 band by immunoblotting is specifically inhibited by the immunizing peptide.

The mammalian homolog of yeast Hrd1p/Der3p, HRD1, also named synoviolin (SYVN1), is an ER-membrane resident E3 ubiquitin ligase. HRD1 protects against ER stress-induced apoptosis through ER stress-associated protein degradation (ERAD).^{1,2} Quality control in the ER is regulated by productive folding and ERAD mechanisms. During ERAD, misfolded proteins accumulated in the ER are transferred to the cytosol, where they are destroyed by the ubiquitin-proteasome system.³ Accelerated refolding and degradation of unfolded proteins are induced in response to ER stress by the UPR transcriptional program.⁴

HRD1 expression is strongly induced by ER stress.⁵ HRD1 has a five-transmembrane domain, a RING-finger domain that mediates the transfer of ubiquitin from E2 to substrates, and a proline-rich domain.¹ HRD1 interacts with Pael-R, a substrate of Parkin, through its proline-rich domain, promoting Pael-R degradation, and thus protects neurons from cell death caused by the accumulation of Pael-R.⁶ HRD1 was also found to enhance the degradation and to suppress the toxicity of polyglutamine-expanded huntingtin.⁷ In addition to its role in ERAD, HRD1 targets the p53 tumor suppressor gene for proteasomal degradation.⁸ Overexpression of HRD1 is implicated in the pathogenesis of rheumatoid arthritis.⁹

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~1.0 mg/mL

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2–8 °C for up to one month. For extended storage freeze in working aliquots. Repeated freezing and thawing is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 0.2-0.4 µg/mL is recommended using a whole extract of HEK-293T cells expressing human HRD1/SYVN1; a working concentration of 5-10 µg/mL is recommended using a whole extract of human MCF-7 cells.

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration.

References

1. Kaneko, M. et al., *FEBS Lett.*, **532**, 147-152 (2002).
2. Kaneko, M., and Nomura, Y., *Life Sci.*, **74**, 199-205 (2003).
3. Meusser, B. et al., *Nature Cell Biol.*, **7**, 766-772 (2005).

4. Kostova, Z., and Wolf, D.H., *EMBO J.*, **22**, 2309-2317 (2003).
5. Kaneko, M. et al., *FEBS Lett.*, **581**, 5355-5360 (2007).
6. Omura, T. et al., *J. Neurosci. Res.*, **86**, 1577-1587 (2008).
7. Yang, H. et al., *Exp. Cell Res.*, **313**, 538-550 (2006).
8. Yamasaki, S. et al., *EMBO J.*, **26**, 113-122 (2007).
9. Amano, T. et al., *Genes Dev.*, **17**, 2436-2449 (2003).

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