

Hrd1 (Synoviolin)

Cat. # UB307

Background

Hrd1 is a RING domain E3 ligase involved in the conjugation of ubiquitin to target substrates. It has been shown to function with the E2 enzymes UBE2D3 (Ubch5c) and UBE2G2 *in vitro*. As an ER-associated ligase, Hrd1 plays a role in ER-associated degradation (ERAD) and has been implicated in rheumatoid arthritis. It is present in human rheumatoid synovial cells and has been identified as a causative factor for arthropathy in *in vivo* studies. Additionally, Hrd1 is found in brain neurons, and its proper regulation may be linked to neurodegenerative diseases. This construct represents an N-terminal deletion of Hrd1, encompassing residues 236-617, which includes the complete C-terminal cytoplasmic portion. The N-terminal transmembrane spanning portion has been deleted. This Hrd1 N-terminal deletion mutant remains active as an E3 ligase, retaining both the RING and substrate recognition domains.

Alternate Names

Synoviolin 1, DER3, RING-Type E3 Ubiquitin Transferase Synoviolin, Synovial Apoptosis Inhibitor 1, E3 Ubiquitin-Protein Ligase Synoviolin, HMG-CoA Reductase Degradation 1 Homolog

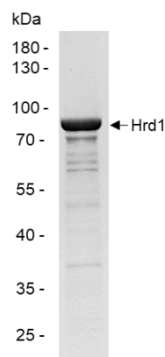
Application(s)

Useful in conjunction with E1 and E2 for the study of enzyme kinetics, screening inhibitors, and selectivity profiling.

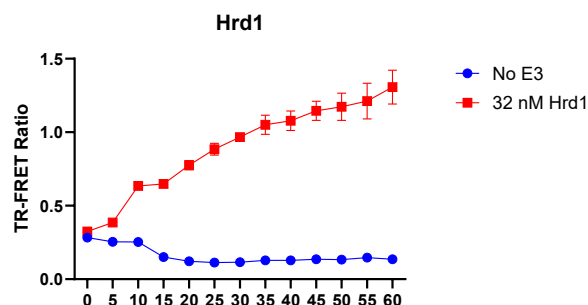
Product Specifications

Affinity tag	His ₆ -SUMO
Purity	> 80% by SDS-PAGE
Molecular Weight	Cytoplasmic fragment (residues 236–617): Calculated molecular weight: 49.3 kDa (with His ₆ -SUMO tag); apparent molecular weight: >70 kDa (by SDS-PAGE)
Quantity	25 µg
Species	Human
Expression System	<i>E. coli</i>
Physical State	Liquid
Buffer	50 mM Tris, 150 mM NaCl, 10 mM DTT, 10% glycerol
Activity	A typical enzyme concentration of 10-100 nM is used for <i>in vitro</i> conjugation, depending on assay conditions
Storage	Store at -80°C. Avoid repeated freeze/thaw cycles

Product QC



SDS-Page Analysis of purified Hrd1. Two µg of the protein was loaded on a 10-20% SDS-PAGE gel and stained with Coomassie brilliant blue.



Activity Assay of Hrd1. 32 nM Hrd1 was tested in a TR-FRET assay showing robust E3 ligase activity.

tended for human or animal diagnostic or therapeutic uses

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References

1. Li, K., et al., Metabolism, 2021. 114:154349.
2. Wu, X., et al., Science, 2020. 368(6489):eaaz2449..

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