Revision 1

Derlin-1 Antibody

#8897 Store at -20C

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H M R Mk	Endogenous	22	Rabbit	#Q9BUN8	79139

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

Derlin-1 Antibody recognizes endogenous levels of total Derlin-1 protein. Based upon sequence alignment, this antibody is not predicted to cross-react with either Derlin-2 or Derlin-3.

Species predicted to react based on 100% sequence homology

Bovine, Dog, Pig, Horse, Guinea Pig

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human Derlin-1 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Elimination of misfolded proteins from the endoplasmic reticulum (ER) occurs largely through the ER-associated degradation (ERAD) pathway and is an important physiological adaptation to ER stress. After insertion into the lumen of the ER, glycoproteins that fail to fold properly are destined for degradation. Through a process termed retro-translocation, misfolded proteins are deposited into the cytosol from the ER, where ubiquitination, deglycosylation, and proteasomal proteolysis lead to their degradation. Derlin-1 (Der1-like protein) corresponds to a homologue of yeast Der1p, a protein identified in a genetic screen for components required for the degradation of misfolded ER luminal proteins (1). Like yeast Der1p, mammalian Derlin-1 is an ER protein that is predicted to have four transmembrane segments with both the amino and carboxy termini exposed to the cytoplasmic compartment (2-4). Derlin-1 appears to be a central, evolutionarily conserved membrane component of the retro-translocation machinery associated with the ERAD pathway. Indeed, studies have shown that Derlin-1 expression is transcriptionally upregulated in response to ER stress (5-7) and associates with ER-anchored ubiquitin ligases, such as HRD1 and gp78/AMFR, via binding to p97/VCP and VCP-interacting membrane protein (VIMP) (5,8).

Background References

1. Knop, M. et al. (1996) *EMBO J* 15, 753-63.
2. Hitt, R. and Wolf, D.H. (2004) *FEMS Yeast Res* 4, 721-9.
3. Lilley, B.N. and Ploegh, H.L. (2004) *Nature* 429, 834-40.
4. Ye, Y. et al. (2004) *Nature* 429, 841-7.
5. Lilley, B.N. and Ploegh, H.L. (2005) *Proc Natl Acad Sci USA* 102, 14296-301.
6. Travers, K.J. et al. (2000) *Cell* 101, 249-58.
7. Oda, Y. et al. (2006) *J Cell Biol* 172, 383-93.
8. Ye, Y. et al. (2005) *Proc Natl Acad Sci USA* 102, 14132-8.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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