Product Information

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Anti-Derlin-2
produced in rabbit, affinity isolated antibody

Catalog Number **D1194**

Product Description

Anti-Derlin-2 is produced in rabbit using as immunogen a synthetic peptide corresponding to amino acids 223-239 of human Derlin-2 (GeneID: 51009), conjugated to KLH via an N-terminal added cysteine. The corresponding sequence is identical in mouse. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Derlin-2 recognizes human and mouse Derlin-2 and can be used in immunoblotting (~21 kDa) and immunofluorescence. Detection of the Derlin-2 band by immunoblotting is specifically inhibited by the immunizing peptide.

Derlin-2, also known as F-LANa, is involved in the degradation of misfolded glycoproteins in the ER.[1, 2] Proteins that fail to fold in the ER are transferred from the ER to the cytosol, where they are destroyed by the ubiquitin-proteasome system.[3] Quality control in the ER is regulated by productive folding and ER-associated degradation (ERAD) mechanisms. Accelerated refolding and degradation of unfolded proteins are induced in response to ER stress by a transcriptional program termed the unfolded protein response (UPR).[2] Derlin-1, Derlin-2, and Derlin-3 are the mammalian homologues of yeast Der1p, a transmembrane protein required for yeast ERAD.[1, 2] Derlin-1 is required for the dislocation of misfolded proteins from the ER lumen to the cytosol.[4, 5] Derlin-2 shares ~30% sequence identity with Derlin-1 and spans the lipid bilayer of the ER four times, showing structural similarity to Derlin-1.[1] Derlin-2 and Derlin-3 are components of the mammalian ERAD, and are upregulated by the UPR. Derlin-2 is a target of the IRE1-XBP1 pathway, similar to EDEM (ER degradation enhancing α-mannosidase-like protein) and EDEM2, which are receptor-like molecules for misfolded glycoprotein. Overexpression of Derlin-2 or Derlin-3 accelerates degradation of misfolded glycoprotein, whereas their knockdown blocks degradation.[2] Derlin-2 and Derlin-3 interact with each other and are associated with other proteins known to be involved in ERAD, such as EDEM and the cytosolic p97 AAA ATPase. Derlin-2 also interacts with the mammalian orthologs of the yeast Hrd1p/Hrd3p ubiquitin-ligase complex.[1, 2]

Reagent

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

Antibody concentration: ~1.0 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material 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, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 2.0-4.0 µg/mL is recommended using a whole extract of mouse 3T3 cells.

Immunofluorescence: a working concentration of 5-10 µg/mL is recommended using human HeLa cells.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

1. Lilley, B.N., and Ploegh, H.L., *Proc. Natl. Acad. Sci. USA*, **102**, 14296-14301 (2005).
2. Oda, Y., et al., *J. Cell Biol.*, **172**, 383-393 (2006).
3. Kostova, Z., and Wolf, D.H., *EMBO J.*, **22**, 2309-2317 (2003).
4. Lilley, B.N., and Ploegh, H.L., *Nature*, **429**, 834-840 (2004).
5. Ye, Y., et al., *Nature*, **429**, 841-847 (2004).

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