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ERN1 / IRE1 Antibody (clone 3D1)

Mouse Monoclonal Antibody
Catalog # ALS14048

Specification

ERN1 / IRE1 Antibody (clone 3D1) - Product Information

Application	**WB**
Primary Accession	O75460
Reactivity	**Human**
Host	**Mouse**
Clonality	**Monoclonal**
Calculated MW	**110kDa KDa**

ERN1 / IRE1 Antibody (clone 3D1) - Additional Information

Gene ID 2081

Other Names
Serine/threonine-protein kinase/endoribonuclease IRE1, Endoplasmic reticulum-to-nucleus signaling 1, Inositol-requiring protein 1, hIRE1p, Ire1-alpha, IRE1a, Serine/threonine-protein kinase, 2.7.11.1, Endoribonuclease, 3.1.26.-, ERN1 (HGNC:3449)

Target/Specificity
Human IRE1

Reconstitution & Storage
Short term 4°C, long term aliquot and store at -20°C, avoid freeze thaw cycles.

Precautions
ERN1 / IRE1 Antibody (clone 3D1) is for research use only and not for use in diagnostic or therapeutic procedures.

ERN1 / IRE1 Antibody (clone 3D1) - Protein Information

Name ERN1 (HGNC:3449)

Function
Serine/threonine-protein kinase and endoribonuclease that acts as a key sensor for the endoplasmic reticulum unfolded protein response (UPR) (PubMed:11175748, PubMed:11779464, PubMed:12637535, PubMed:21317875, PubMed:28128204, PubMed:9637683, PubMed:30118681). In

unstressed cells, the endoplasmic reticulum luminal domain is maintained in its inactive monomeric state by binding to the endoplasmic reticulum chaperone HSPA5/BiP (PubMed:21317875). Accumulation of misfolded proteins in the endoplasmic reticulum causes release of HSPA5/BiP, allowing the luminal domain to homodimerize, promoting autophosphorylation of the kinase domain and subsequent activation of the endoribonuclease activity (PubMed:21317875). The endoribonuclease activity is specific for XBP1 mRNA and excises 26 nucleotides from XBP1 mRNA (PubMed:11779464, PubMed:24508390, PubMed:21317875). The resulting spliced transcript of XBP1 encodes a transcriptional activator protein that up-regulates expression of UPR target genes (PubMed:11779464, PubMed:24508390, PubMed:21317875). Acts as an upstream signal for ER stress-induced GORASP2-mediated unconventional (ER/Golgi-independent) trafficking of CFTR to cell membrane by modulating the expression and localization of SEC16A (PubMed:21884936, PubMed:28067262).

Cellular Location
Endoplasmic reticulum membrane; Single-pass type I membrane protein

Tissue Location
Ubiquitously expressed. High levels observed in pancreatic tissue.

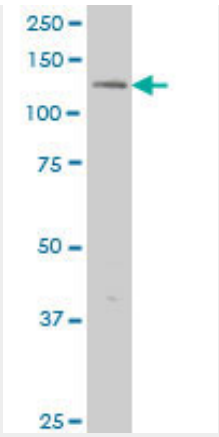
ERN1 / IRE1 Antibody (clone 3D1) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

ERN1 / IRE1 Antibody (clone 3D1) - Images

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ERN1 monoclonal antibody clone 3D1 Western blot of ERN1 expression in HeLa.

ERN1 / IRE1 Antibody (clone 3D1) - Background

Senses unfolded proteins in the lumen of the endoplasmic reticulum via its N-terminal domain which leads to enzyme auto- activation. The active endoribonuclease domain splices XBP1 mRNA to generate a new C-terminus, converting it into a potent unfolded-protein response transcriptional activator and triggering growth arrest and apoptosis.

ERN1 / IRE1 Antibody (clone 3D1) - References

Tirasophon W.,et al.Genes Dev. 12:1812-1824(1998).
Ota T.,et al.Nat. Genet. 36:40-45(2004).
Totoki Y.,et al.Submitted (MAR-2005) to the EMBL/GenBank/DDBJ databases.
Zody M.C.,et al.Nature 440:1045-1049(2006).
Mural R.J.,et al.Submitted (SEP-2005) to the EMBL/GenBank/DDBJ databases.