

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 (http://www.genenames.org/cgi-bin/gene_symbol_report?hgnc_id=3449)
target="_blank">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](http://www.uniprot.org/citations/11175748)), PubMed:[11779464](http://www.uniprot.org/citations/11779464)), PubMed:[12637535](http://www.uniprot.org/citations/12637535)), PubMed:[21317875](http://www.uniprot.org/citations/21317875)), PubMed:[28128204](http://www.uniprot.org/citations/28128204)), PubMed:[9637683](http://www.uniprot.org/citations/9637683)), PubMed:[30118681](http://www.uniprot.org/citations/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

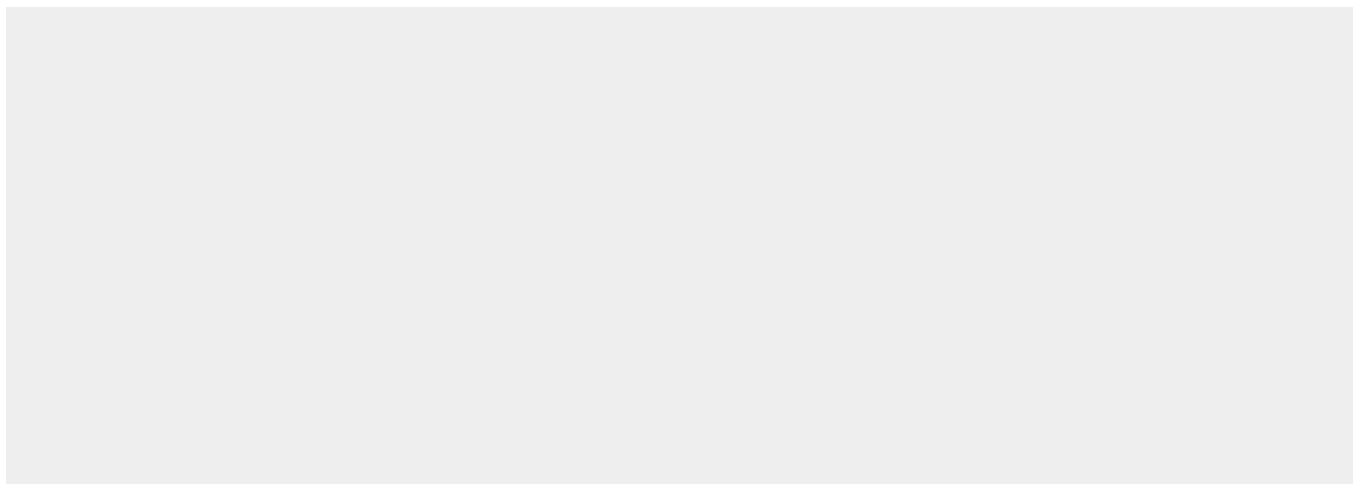
Tissue Location

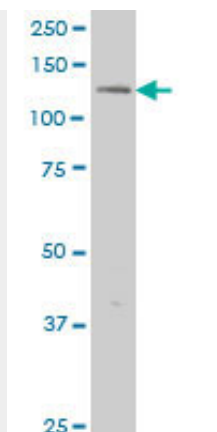
Ubiquitously expressed. High levels observed in pancreatic tissue.

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 Cytometry](#)
- [Cell Culture](#)

ERN1 / IRE1 Antibody (clone 3D1) - Images



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.