

## Product datasheet for **TA336287**

### IRE1 (ERN1) Rabbit Polyclonal Antibody

#### Product data:

Product Type:	Primary Antibodies
Applications:	ICC/IF, IHC, WB
Recommended Dilution:	Immunocytochemistry/ Immunofluorescence: 1:100 - 1:250, Knockdown Validated, Western Blot: 1:1000 - 1:2000, Immunohistochemistry: 1:250 - 1:500, Immunohistochemistry-Paraffin: 1:250 - 1:500, Knockout Validated
Reactivity:	Human, Mouse, Rat (Does not react with: Primate)
Host:	Rabbit
Clonality:	Polyclonal
Immunogen:	A synthetic peptide within the human IRE1 alpha protein (within residues 700-800). [Swiss-Prot #O75460]
Formulation:	Tris-glycine, 150 mM NaCl, 0.05% Sodium Azide. Store at -20C. Avoid freeze-thaw cycles.
Concentration:	lot specific
Purification:	Immunogen affinity purified
Conjugation:	Unconjugated
Storage:	Store at -20°C as received.
Stability:	Stable for 12 months from date of receipt.
Predicted Protein Size:	110 kDa
Gene Name:	endoplasmic reticulum to nucleus signaling 1
Database Link:	<a href="#">NP_001424</a> <a href="#">Entrez Gene 78943 Mouse</a> <a href="#">Entrez Gene 498013 Rat</a> <a href="#">Entrez Gene 2081 Human</a> <a href="#">O75460</a>

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**Background:**

Unfolded protein response (UPR) signaling, mechanism used by eukaryotic cells to cope ER stress, is initiated by three ER-localized protein sensors: PERK (PKR-like ER kinase), ATF (activating transcription factor 6), and IRE1 alpha (inositol-requiring enzyme 1 alpha). UPR-responsive genes's transcriptional activation is regulated by ATF6 and IRE1-XBP1 pathways, and UPR serves three important functions: inhibition of protein translation to restore normal cell functions; activation of signaling to increase production of molecular chaperones involved in protein folding; and activation of signaling that leads to targeting of misfolded proteins in ER for ubiquitination and subsequent degradation; or when ER-stress is not relieved, UPR leads to apoptosis. Localized as a single-pass type I membrane protein in ER membrane, IRE1 alpha is ubiquitously expressed with high levels observed in pancreatic tissue. It undergoes autophosphorylation and gets ADP-ribosylated by PARP16 upon ER stress, which increases its kinase as well as endonuclease activities. IRE1 alpha senses unfolded proteins in the ER lumen via its N-terminal domain which leads to enzyme auto-activation and thereafter, the active endoribonuclease domain splices XBP1 mRNA to generate a new C-terminus, converting it into a potent UPR transcriptional activator. IRE1 alpha inactivation in mice has been shown to result in widespread developmental defects, leading to intra-gestational embryonic lethality and ER stress mediated cell death is responsible for several pathologies.

**Synonyms:**

hIRE1p; IRE1; IRE1a; IRE1P

**Note:**

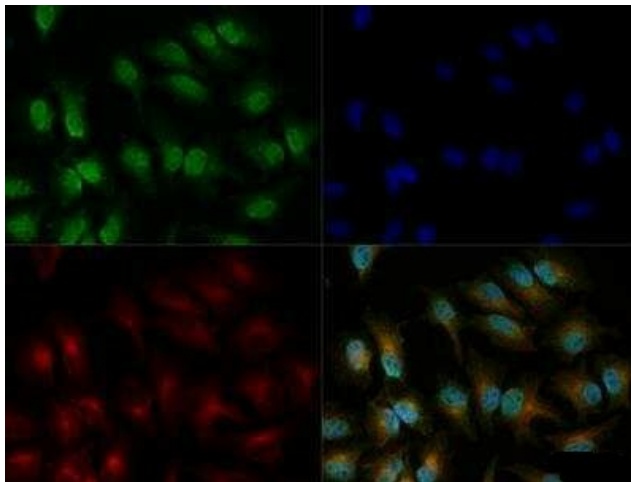
This IRE1 alpha antibody is useful for Western blot, where a band ~110 kDa is observed. In ICC/IF endoplasmic reticulum staining was observed in HeLa cells.

**Protein Families:**

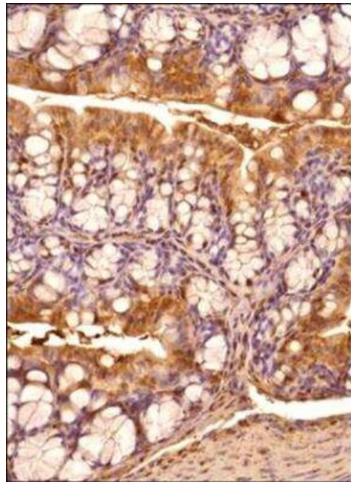
Protein Kinase, Transmembrane

**Protein Pathways:**

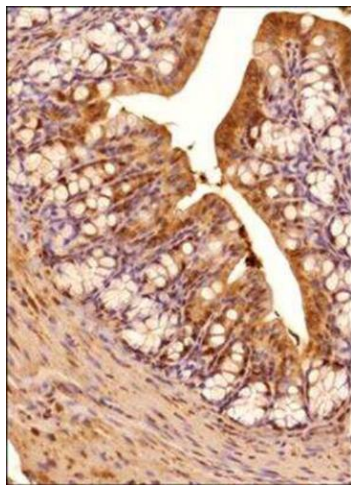
Alzheimer's disease

**Product images:**


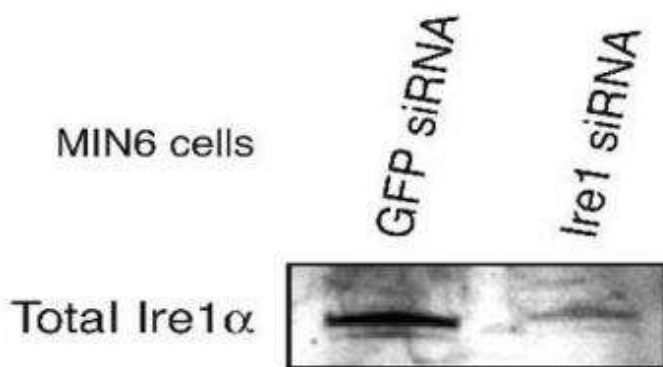
Immunocytochemistry/Immunofluorescence:  
IRE1 alpha Antibody TA336287 - IRE-1 alpha antibody was tested in HeLa cells at 1:200 against Dylight 488 (Green). Alpha tubulin and nuclei were counterstained against Dylight 568 (Red) and DAPI (Blue).



Immunohistochemistry-Paraffin: IRE1 alpha Antibody TA336287 - Analysis of a formalin fixed mouse colon tissue section using total IRE1 alpha antibody (TA336287) at 1:300. Note a strong cytoplasmic signal in various cells of colonic villi (columnar epithelial and goblet cells) and the muscular layer. Some cells, most likely with active UPR, depicted nuclear positivity also while the signal was negligible in crypts cells and lamina propria.



Immunohistochemistry-Paraffin: IRE1 alpha Antibody TA336287 - Analysis of a formalin fixed mouse colon tissue section using total IRE1 alpha antibody (TA336287) at 1:300. Note a strong cytoplasmic signal in various cells of colonic villi (columnar epithelial and goblet cells) and the muscular layer. A few cells, potentially with active UPR, showed nuclear positivity also while the signal was negligible in cells at base of crypts and lamina propria.



Western Blot: IRE1 alpha Antibody TA336287 - Total IRE1 Alpha protein in lysates from Min6 cells which were transfected with GFP-siRNA or Ire1-siRNA. Theoretical molecular weight: 110 kDa.