10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

ERN1 Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1379a

Product Information

Application	WB, IHC, E
Primary Accession	O75460
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	9F2
Isotype	IgG1
Calculated MW	109735
Description	The protein encoded by this gene is the ER to nucleus signalling 1 protein, a human homologue of the yeast Ire1 gene product. This protein possesses intrinsic kinase activity and an endoribonuclease activity and it is important in altering gene expression as a response to endoplasmic reticulum-based stress signals.
Immunogen	Purified recombinant fragment of human ERN1(aa282-433) expressed in E. Coli.
Formulation	Ascitic fluid containing 0.03% sodium azide.

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)
Dilution	WB~~1/500 - 1/2000 IHC~~1/500 - 1/2000 E~~N/A
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	ERN1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

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:19328063, PubMed:21317875, PubMed:28128204, PubMed:30118681, PubMed:36739529, PubMed:9637683). 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:21317875, PubMed:24508390). The resulting spliced transcript of XBP1 encodes a transcriptional activator protein that up-regulates expression of UPR target genes (PubMed:11779464, PubMed:21317875, PubMed:24508390). 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.

References

1. Biochem Biophys Res Commun. 2004 Apr 30;317(2):390-6. 2. Mol Cell Biol. 2005 Sep;25(17):7522-33. 3. Science. 2007 Nov 9;318(5852):944-9.

Images

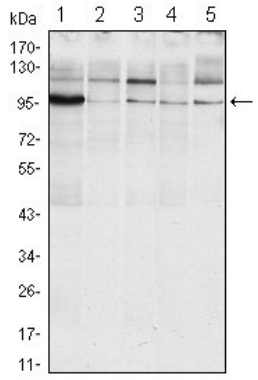


Figure 1: Western blot analysis using ERN1 mouse mAb against Raji (1), A431 (2), Jurkat (3), Hela(4) and HEK293 (5) cell lysate.

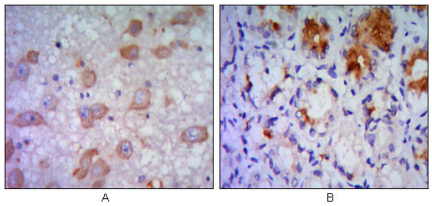
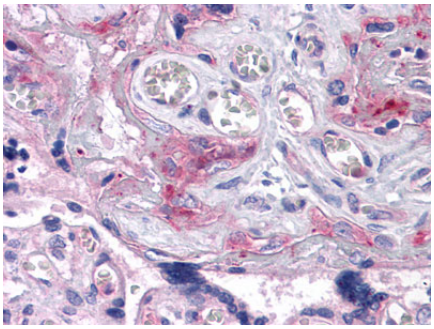


Figure 2: Immunohistochemical analysis of paraffin-embedded human brain tissue (A) and stomach tissue (B), showing cytoplasmic localization using ERN1 mouse mAb with DAB staining.

Figure 3: Immunohistochemical analysis of paraffin-embedded human Placenta



tissues using ERN1 mouse mAb