Store at -20°C

#3294

IRE1α (14C10) Rabbit mAb

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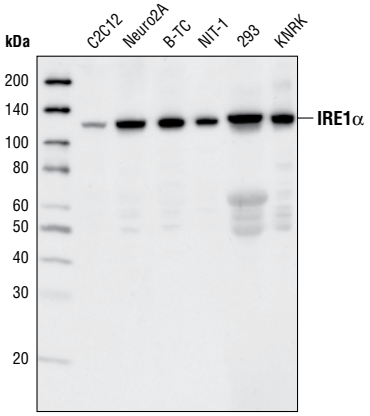
Entrez-Gene ID #2081
UniProt ID #075460

Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W, IP Endogenous	H, M	130 kDa	Rabbit IgG**

Background: The secretory, intra-organellar and transmembrane proteins translocate into the endoplasmic reticulum (ER) after their synthesis. Inside the ER, they are post-translationally modified and properly folded. Disruptions of ER homeostasis leads to the accumulation of unfolded proteins (1). The ER has developed an adaptive mechanism called unfolded protein response (UPR) to counteract compromised protein folding (1). One of the players in UPR, IRE1, was first identified in *Saccharomyces cerevisiae* as a transmembrane serine/threonine kinase (2-4). This kinase was proposed to be a proximal sensor for UPR that transmits the unfolded protein signal across the ER membrane (3,4). A human homolog of this kinase, IRE1α, was later identified and shown to be ubiquitously expressed in human tissues (5). Upon activation of UPR, IRE1α splices X-box binding protein (XBP1) mRNA by an unconventional mechanism using its endoribonuclease activity (6). This converts XBP1 into a potent transcriptional activator that induces many UPR responsive genes (6). Recently, IRE1α was shown to mediate the rapid degradation of certain mRNAs based on the ER-localization and primary sequences of their encoded proteins, suggesting a novel mechanism in UPR (7).

Specificity/Sensitivity: IRE1α (14C10) Rabbit mAb detects endogenous levels of total IRE1α protein.

Source/Purification: IRE1α (14C10) Rabbit mAb is produced by immunizing rabbits with a synthetic peptide corresponding to residues surrounding His963 of human IRE1α.



Western blot analysis of extracts from various cell lines, using IRE1α (14C10) Rabbit mAb.

Background References:

(1) Kaufman, R.J. et al. (2002) *Nat. Rev. Mol. Cell Biol.* 3, 411–421.

(2) Nikawa, J. and Yamashita, S. (1992) *Mol. Microbiol.* 6, 1441–1446.

(3) Cox, J.S. et al. (1993) *Cell* 73, 1197–1206.

(4) Mori, K. et al. (1993) *Cell* 74, 743–756.

(5) Tirasophon, W. et al. (1998) *Genes Dev.* 12, 1812–1824.

(6) Lee, K. et al. (2002) *Genes Dev.* 16, 452–466.

(7) Hollien, J. and Weissman, J.S. (2006) *Science* 313, 104–107.

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. *Do not aliquot the antibody.*

***Species cross-reactivity is determined by western blot.**

****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

Western blotting	1:1000
Immunoprecipitation	1:50

For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween®20 at 4°C with gentle shaking, overnight.

Tween®20 is a registered trademark of ICI Americas, Inc.

Applications Key: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide

Species Cross-Reactivity Key: **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—Horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.