

IRP1 (D6S4J) Rabbit mAb

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H	Endogenous	98	Rabbit IgG	#P21399	48

Product Usage Information**Application**

Western Blotting

Dilution

1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Specificity/Sensitivity

IRP1 (D6S4J) Rabbit mAb recognizes endogenous levels of total IRP1 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Leu734 of human IRP1 protein.

Background

Iron regulatory proteins (IRPs; also known as IREBs) are RNA-binding proteins that recognize iron-responsive elements (IREs) and play an important role in maintaining iron homeostasis in mammalian cells. IREs are conserved cis-regulatory hairpin structures located within the 5' or 3' untranslated regions (UTRs) of target mRNAs. IRPs inhibit translation when bound to IREs within the 5' UTR of mRNA encoding for proteins involved in iron storage, export, and utilization. IRP binding to multiple IREs within the 3' UTR of transferrin receptor 1 (TFR1) mRNA prevents its degradation, thereby augmenting translation of TFR1 and increasing iron uptake into cells (1-3). Dysregulation of IRPs has been associated with human cancers (4-6).

IRP1 is a bifunctional protein. In iron replete cells, IRP1 is associated with a 4Fe-4S cluster that keeps IRP1 in a closed conformation, and functions as a cytosolic aconitase catalyzing the conversion of citrate into iso-citrate. In iron deficient cells, IRP1 loses the 4Fe-4S cluster and adopts an open structure with IRE-binding activity (7).

Background References

1. Rouault, T.A. (2006) *Nat Chem Biol* 2, 406-14.
2. Wang, J. and Pantopoulos, K. (2011) *Biochem J* 434, 365-81.
3. Pantopoulos, K. et al. (2012) *Biochemistry* 51, 5705-24.
4. Haro, K.J. et al. (2012) *PLoS One* 7, e48841.
5. Wang, W. et al. (2014) *Cancer Res* 74, 497-507.
6. Jeong, S.M. et al. (2015) *Oncogene* 34, 2115-24.
7. Anderson, C.P. et al. (2012) *Biochim Biophys Acta* 1823, 1468-83.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

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

Applications Key

W: Western Blotting

Cross-Reactivity Key

H: Human

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