

PITRM1 Antibody

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H M	Endogenous	117	Rabbit	#Q5JRX3	10531

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 and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

Specificity/Sensitivity

PITRM1 Antibody recognizes endogenous levels of total PITRM1 protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Leu1021 of human PITRM1 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Pitriylsin metalloproteinase 1 (PITRM1 or PreP) is a mitochondria-enriched presequence peptidase that processes the mitochondrial targeting sequence (MTS) of proteins imported across the inner mitochondrial membrane (1). Mitochondria normally function to regulate many cellular processes such as energy production and apoptosis, and its dysfunction may contribute indirectly or directly to human neurodegenerative diseases like Alzheimer's and Parkinson's disease (2, 3; AD and PD, respectively). Interestingly, A β , the pathological hallmark of AD, accumulates in mitochondria and inhibits Cym1, the PITRM1 yeast ortholog, leading to impaired MTS processing and accumulation of unprocessed mitochondrial proteins, suggesting an indirect role of A β and mitochondrial dysfunction via PITRM1 (4). In addition to biochemical association of PITRM1 with A β -dependent mitochondrial dysfunction, human genetics suggest a more direct link as PITRM1 genetic variants have been associated with AD (5, 6). The specific mechanism is currently poorly understood, but may involve impairment of PITRM1-dependent degradation of A β , directly resulting in pathological accumulation of A β in mitochondria (6).

Background References

1. Mzhavia, N. et al. (1999) *DNA Cell Biol* 18, 369-80.
2. Audano, M. et al. (2018) *J Neurochem* , .
3. Grünewald, A. et al. (2018) *Prog Neurobiol* , .
4. Mossmann, D. et al. (2014) *Cell Metab* 20, 662-9.
5. Pinho, C.M. et al. (2010) *Neurosci Lett* 469, 204-8.
6. Brunetti, D. et al. (2016) *EMBO Mol Med* 8, 176-90.

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 BSA, 1X TBS, 0.1% Tween@ 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

H: Human **M:** Mouse

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