Revision 1

Store at -20C

#14181

CLPP Antibody

Cell Signaling TECHNOLOGY®

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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, IP	H	Endogenous	28	Rabbit	#Q16740	8192

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50

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

CLPP Antibody recognizes endogenous levels of total CLPP protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro263 of human CLPP protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

The proteolytic component, Tetradecameric Peptidase (CLpP), is a hexamer in one of four ATP-dependent mitochondrial proteases (CLpXP). CLPP, one of the proteases, is an endopeptidase that is highly conserved among prokaryotes and eukaryotes, both at the level of amino acid sequence and quaternary structure. The active unit of CLPP is a barrel-shaped tetradecamer, Proteolysis of larger substrates is initiated by caseinolytic peptidase X (CLPX) which unfolds specific protein substrates. The unfolded polypeptide chain translocates into the CLPP proteolytic chamber for protein degradation within the interior chamber of mitochondria (1). Recessive mutations in *CLPP* cause Perrault Syndrome, a heterogeneous condition characterized by sensorineural hearing loss and ovarian failure (2).

Mutations in Parkin or PINK1 cause recessively inherited Parkinson's disease. In healthy mitochondria, PINK1 is rapidly degraded by mitochondrial proteases and the proteasome. Upon mitochondrial depolarization, PINK1 accumulates on the mitochondrial surface, recruits Parkin from the cytosol, and initiates mitophagy. The mitochondrial proteases MPP, PARL, m-AAA and CLPP have been implicated in PINK1 degradation and cleavage (3).

Background References

1. Yu, A.Y. and Houry, W.A. (2007) *FEBS Lett* 581, 3749-57.
2. Jenkinson, E.M. et al. (2013) *Am J Hum Genet* 92, 605-13.
3. Greene, A.W. et al. (2012) *EMBO Rep* 13, 378-85.

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 **IP:** Immunoprecipitation

Cross-Reactivity Key

H: Human

Trademarks and Patents

Limited Uses

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