

PTPA/PPP2R4 Antibody



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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H M R Mk	Endogenous	40	Rabbit	#Q15257	5524

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

PTPA/PPP2R4 Antibody detects endogenous levels of total PTPA protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Asp35 of human PTPA. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Protein phosphatase type 2A (PP2A) is an essential protein serine/threonine phosphatase that is conserved in all eukaryotes. PP2A is a key enzyme within various signal transduction pathways as it regulates fundamental cellular activities such as DNA replication, transcription, translation, metabolism, cell cycle progression, cell division, apoptosis and development (1-3). Active protein phosphatase 2A is composed of both structural (A) and catalytic (C) proteins, and its activity relies on interaction with regulatory (B) subunits. An important PP2A regulatory subunit is PP2A phosphatase activator (PTPA), also known as the PP2A activator regulatory subunit 4 (PPP2R4) (4). This PTPA regulatory protein binds ATP and has isomerase (PPIase) activity, suggesting that PP2A regulation involves a change in phosphatase conformation. The addition of ATP (and Mg²⁺) results in a correlated increase in both PP2A activation and PTPA isomerase activity (5). While the exact mechanism is still under consideration, evidence suggests that binding of PTPA to the PP2A A-C dimer produces a conformational change in PP2A that shifts phosphatase substrate specificity from phosphoserine to phosphotyrosine substrates (6).

Background References

- Janssens, V. and Goris, J. (2001) *Biochem J* 353, 417-39.
- Zolnierowicz, S. (2000) *Biochem Pharmacol* 60, 1225-35.
- Millward, T.A. et al. (1999) *Trends Biochem Sci* 24, 186-91.
- Fellner, T. et al. (2003) *Genes Dev* 17, 2138-50.
- Jordens, J. et al. (2006) *J Biol Chem* 281, 6349-57.
- Chao, Y. et al. (2006) *Mol Cell* 23, 535-46.

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 **R:** Rat **Mk:** Monkey

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