Revision 5

Store at -20C

#2041

PP2A A Subunit (81G5) Rabbit mAb

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, IHC-P, IF-IC	H M R Mk	Endogenous	62	Rabbit IgG	#P30153	5518

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunohistochemistry (Paraffin)	1:100
Immunofluorescence (Immunocytochemistry)	1:100

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.

For a carrier free (BSA and azide free) version of this product see product #74085.

Specificity/Sensitivity

PP2A A Subunit (81G5) Rabbit mAb detects endogenous levels of PP2A A subunit, alpha isoform. The antibody does not cross-react with other PP2A subunits.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to the sequence of human PP2A A Subunit protein.

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). The core enzyme consists of catalytic C and regulatory A (or PR65) subunits, with each subunit represented by α and β isoforms (1). Additional regulatory subunits belong to four different families of unrelated proteins. Both the B (or PR55) and B' regulatory protein families contain α, β, γ and δ isoforms, with the B' family also including an ε protein. B'' family proteins include PR72, PR130, PR59 and PR48 isoforms, while striatin (PR110) and SG2NA (PR93) are both members of the B''' regulatory protein family. These B subunits competitively bind to a shared binding site on the core A subunit (1). This variable array of holoenzyme components, particularly regulatory B subunits, allows PP2A to act in a diverse set of functions. PP2A function is regulated by expression, localization, holoenzyme composition and post-translational modification. Phosphorylation of PP2A at Tyr307 by Src occurs in response to EGF or insulin and results in a substantial reduction of PP2A activity (4). Reversible methylation on the carboxyl group of Leu309 of PP2A has been observed (5,6). Methylation alters the conformation of PP2A, as well as its localization and association with B regulatory subunits (6-8).

Background References

1. Janssens, V. and Goris, J. (2001) *Biochem J* 353, 417-39.
2. Zolnierowicz, S. (2000) *Biochem Pharmacol* 60, 1225-35.
3. Millward, T.A. et al. (1999) *Trends Biochem Sci* 24, 186-91.
4. Chen, J. et al. (1992) *Science* 257, 1261-4.
5. Turowski, P. et al. (1995) *J Cell Biol* 129, 397-410.
6. Lee, J. et al. (1996) *Proc Natl Acad Sci U S A* 93, 6043-7.
7. Tolstykh, T. et al. (2000) *EMBO J* 19, 5682-91.
8. Yu, X.X. et al. (2001) *Mol Biol Cell* 12, 185-99.

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 **IHC-P:** Immunohistochemistry (Paraffin) **IF-IC:** Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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