Revision 3

Store at -20C

#3011

PI3 Kinase p110β (C33D4) Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, W-S, IP	H	Endogenous	110	Rabbit IgG	#P42338	5291

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Simple Western™	1:10 - 1:50
Immunoprecipitation	1:25

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

PI3 Kinase p110β (C33D4) Rabbit mAb detects endogenous levels of total PI3K p110β protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide of human PI3K p110β.

Background

Phosphoinositide 3-kinase (PI3K) catalyzes the production of phosphatidylinositol-3,4,5-triphosphate by phosphorylating phosphatidylinositol (PI), phosphatidylinositol-4-phosphate (PIP), and phosphatidylinositol-4,5-bisphosphate (PIP_2). Growth factors and hormones trigger this phosphorylation event, which in turn coordinates cell growth, cell cycle entry, cell migration, and cell survival (1). PTEN reverses this process, and research studies have shown that the PI3K signaling pathway is constitutively activated in human cancers that have loss of function of PTEN (2). PI3Ks are composed of a catalytic subunit (p110) and a regulatory subunit. Various isoforms of the catalytic subunit (p110α, p110β, p110γ, and p110δ) have been isolated, and the regulatory subunits that associate with p110α, p110β, and p110δ are p85α and p85β (3). In contrast, p110γ associates with a p101 regulatory subunit that is unrelated to p85. Furthermore, p110γ is activated by βγ subunits of heterotrimeric G proteins (4).
p110ß is widely distributed in tissue and plays an essential role in early embryonic development (5). p110ß stimulates cell proliferation, invasive cell growth, and expression is increased in a number of tumors including glioblastomas (6-8).

Background References

1. Cantley, L.C. (2002) *Science* 296, 1655-7.
2. Simpson, L. and Parsons, R. (2001) *Exp Cell Res* 264, 29-41.
3. Neri, L.M. et al. (2002) *Biochim Biophys Acta* 1584, 73-80.
4. Stoyanov, B. et al. (1995) *Science* 269, 690-3.
5. Okkenhaug, K. and Vanhaesebroeck, B. (2003) *Nat Rev Immunol* 3, 317-30.
6. Czauderna, F. et al. (2003) *Nucleic Acids Res* 31, 670-82.
7. Bénistant, C. et al. (2000) *Oncogene* 19, 5083-90.
8. Knobbe, C.B. and Reifenberger, G. (2003) *Brain Pathol* 13, 507-18.

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 **W-S:** Simple Western™ **IP:** Immunoprecipitation

Cross-Reactivity Key

H: Human

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