

PI3 Kinase p101 (D32A5) Rabbit mAb

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|---------------------------|---------------------------|-----------------------------------|-------------------------|--------------------------------------|-------------------------------|---------------------------------|
| Applications: W | Reactivity: H M | Sensitivity: Endogenous | MW (kDa): 101 | Source/Isotype: Rabbit IgG | UniProt ID: #Q8WYR1 | Entrez-Gene Id: 23533 |
|---------------------------|---------------------------|-----------------------------------|-------------------------|--------------------------------------|-------------------------------|---------------------------------|

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, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Specificity/Sensitivity

PI3 Kinase p101 (D32A5) Rabbit mAb recognizes endogenous levels of total PI3 Kinase p101 protein. This antibody also detects a strong background band of unknown origin between 50-60 kDa.

Species predicted to react based on 100% sequence homology

Rat

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Gly508 of human PI3 Kinase p101 protein.

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 (PIP₂). 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 (p110 α , p110 β , p110 γ , and p110 δ) have been isolated, and the regulatory subunits that associate with p110 α , p110 β , and p110 δ are p85 α and p85 β (3). In contrast, p110 γ associates with a p101 regulatory subunit that is unrelated to p85. Furthermore, p110 γ is activated by $\beta\gamma$ subunits of heterotrimeric G proteins (4). The p101 regulatory subunit binds to G $\beta\gamma$, released from heterotrimeric G proteins, and recruits bound p110 γ catalytic subunit to the plasma membrane, which is required for GPCR-induced PI3K γ activity (5).

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. Voigt, P. et al. (2005) *J Biol Chem* 280, 5121-7.

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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