

Product Information

Anti-PIP5K1C (N-terminal)

produced in rabbit, affinity isolated antibody

Product Number **K2019**

Product Description

Anti-PIP5K1C (N-terminal) is produced in rabbit using as the immunogen a synthetic peptide corresponding to a sequence at the N-terminal of human PIP5K1C (GenelD 23396), conjugated to KLH. The corresponding sequence is identical in rat and mouse PIP5K1C. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-PIP5K1C (N-terminal) specifically recognizes human, rat, and mouse PIP5K1C. The antibody can be used in several immunochemical techniques including immunoblotting (~90 kDa) and immunoprecipitation. Detection of the PIP5K1C band by immunoblotting is specifically inhibited by the PIP5K1C immunizing peptide.

PIP5K1C (phosphatidylinositol-4-phosphate-5-kinase, type 1 γ , also known as PIPKI γ) belongs to the type I phosphatidylinositol-4-phosphate-5-kinases that phosphorylate PtdIns(4)P to generate PtdIns(4,5)P₂, a major signaling molecule that plays key roles in cell migration and in neuronal presynaptic function.¹⁻⁴ PIP5K1C/PIPKI γ is expressed at high levels in the brain, and is concentrated at synapses, where it synthesizes a large fraction of the presynaptic PtdIns(4,5)P₂.^{2,4,5}

The C-terminal region of PIP5K1C undergoes alternative splicing to generate two closely related isoforms of 87 and 90 kDa. The predominant 90 kDa splice variant expressed in brain contains a unique 28 amino acid-tail that interacts with talin, a principal component of focal adhesions, resulting in recruitment of PIP5K1C to the plasma membrane and in its activation. PIP5K1C has been shown to bind to the FERM domain of talin, that contains also the binding sites of β -integrin, actin, and PtdIns(4,5)P₂.^{2,6} It has been suggested that at neuronal synapses recruitment of PIP5K1C by talin to the membrane may be required to generate the PtdIns(4,5)P₂ pool involved in clathrin coat and actin dynamics during vesicle recycling.^{4,5}

EGF receptor directly phosphorylates PIP5K1C at Tyr⁶³⁴ and this event is required for EGF-induced migration.⁷

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~1 mg/mL

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Store at -20 °C. For continuous use, the product may be stored at 2-8 °C for up to one month. For extended storage, freeze in working aliquots at -20 °C. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working antibody concentration of 1-2 μ g/mL is recommended using rat brain (S1 fraction) and 0.5-1 μ g/mL using HEK-293T cells expressing human PIP5K1C.

Immunoprecipitation: a working antibody amount of 5-10 μ g is recommended using a mouse brain extract (S1 fraction).

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration.

References

1. Ishihara, H. et al., *J. Biol. Chem.*, **273**, 8741-8748 (1998).
2. Di Paolo, G. et al., *Nature*, **420**, 85-89 (2002).
3. Ling, K. et al., *Nature*, **420**, 89-93 (2002).
4. Morgan, J.R. et al., *J. Cell Biol.*, **167**, 43-50 (2004).
5. Wenk, M.R. et al., *Neuron*, **32**, 79-88 (2001).
6. Barsukov, I.L. et al., *J. Biol. Chem.*, **278**, 31202-31209 (2003).
7. Sun, Y. et al., *J. Cell Biol.*, **178**, 297-308 (2007).

VS,ER,KAA,TD,PHC,MAM 04/19-1