3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

Anti-Protein kinase C antibody, Mouse monoclonal
clone MC5, purified from hybridoma cell culture

Product Number **SAB4200739**

Product Description

Anti-Protein kinase C antibody, Mouse monoclonal (mouse IgG2a isotype) is derived from the MC5 hybridoma produced by the fusion of X-63 myeloma cells and splenocytes from a BALB/c mouse immunized with purified bovine brain protein kinase C[1]. The isotype is determined by ELISA using Mouse Monoclonal Antibody Isotyping Reagents, Product Number ISO2. The antibody is purified from culture supernatant of hybridoma cells.

Monoclonal Anti-Protein kinase C antibody recognizes an epitope located within the amino acid residues 296-317, at the hinge region, close to or at the trypsin cleavage site of Protein kinase C molecule[1]. The antibody specifically recognizes Protein kinase C from human, rat, bovine[1], mouse[2-3], chicken[4], rabbit[5] and fish[6] origin. Monoclonal Anti-Protein kinase C is recommended to use in various immunochemical assays, including Immunoblot[1,3] (~80 kDa), Immunohistochemistry[2], Immunofluorescence[7] and Immunoprecipitation[1]. *In vitro* experiments demonstrate that monoclonal Anti-Protein kinase C antibody partially protects its antigen from trypsin proteolysis.[1]

Protein kinase C, also known as PKC, is a family of phospholipid- and calcium-activated, diacylglycerol (DAG)-dependent serine/threonine kinases.
The PKC family of isozymes can be subdivided into two major classes: conventional (C) isoforms (α, β1, β2, and γ), which are Ca2+ and phospholipid-dependent kinases and novel (n) isoforms (δ, ε, ζ, η, and Θ) that are Ca2+-independent, phospholipid-stimulated kinases.[8]

PKCs play a central role in a variety of cell processes, including: intracellular signal transduction, cell proliferation, apoptosis, differentiation, migration and adhesion, tumor promotion, cardiac hypertrophy, angiogenesis, platelet function, inflammation and oncogenesis.[1,9,10] Neuronal PKC modulates several functions such as nerve cell excitability, neuronal plasticity and release of neurotransmitters.[1]

PKC activity is regulated by two distinct mechanisms: by phosphorylation which regulates the active site and subcellular localization of the enzyme, or by second messengers which promote PKC's membrane association and resulting pseudosubstrate exposure.[11]

The PKC activity is strongly associated with tumor initiation and progression and have been implemented as a target for treatment of cancer progression and diabetic retinopathy.[1,12-13]

Anti-Protein kinase C antibody, Mouse monoclonal can serve as a useful tool for the study of the specific activation requirements, subcellular distribution, substrate specificities and variation in mode of action of this enzyme protein family. It may also allow the detection and localization of PKC in normal and malignant tissues.

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: ~ 1.0 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Store at –20°C. For continuous use, store at 2–8°C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 1.25–2.5 μg/ml is recommended using human bone marrow neuroblast SH-SY5Y cell extract.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

1. Young S., et al., *Eur J Biochem*., **173**, 247-52 (1988).
2. Barone I., et al., *Mol Vision*, **20**, 1545-56 (2014).
3. Kuramoto K., et al., *Mol Cell Biol*., **34**, 2721-31 (2014).
4. Tran TT., et al., *Poult Sci*., **92**, 1322-30 (2013).
5. Dmitrieva NA., et al., *J Histochem Cytochem*., **55**, 461-76 (2007).
6. Joselevitch C., et al., *Cell Tissue Res*., **330**, 389-403 (2007).
7. Ng T., et al., *Science.*, **283**, 2085-9.
8. Kiley SC., et al., *J. Biol. Chem.*, **266**, 23761-8 (1991).
9. Galvez MI*., Curr Pharm Biotechnol*., **12**, 386-91 (2011).
10. Nishizuka Y., *Science*, **233**, 305-12 (1986).
11. Newton AC., *J Biol Chem*., **270**, 28495-8 (1995).
12. Garg R., et al., *Oncogene*, **33**, 5225-37 (2014).
13. Kang JH., *New J Sci*., **2014**, Article ID 231418 (2014).

SG,DR_OKF/LV.PHC 12/16-1