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Product Information

Anti-PLA2R antibody, Mouse monoclonal
clone 12-6-5, purified from hybridoma cell culture

Product Number **SAB4200757**

Product Description

Anti-PLA2R antibody, Mouse monoclonal (mouse IgG2b isotype) is derived from the 12-6-5 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from mice immunized with recombinant fragment of human PLA2R (aa 20-630) corresponding to extracellular sequence NC3 (containing domains N-terminal Cysteine rich-FibII-CTLD1-CTLD2-CTLD3) (GeneID: 22925). 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.

Anti-PLA2R antibody, Mouse monoclonal specifically recognizes human PLA2R (K_D ~5.4x10^{-10} M as determined by surface plasmon resonance (SPR). The antibody may be used in various immunochemical techniques including Immunoblotting (predicted ~180kDa), Immunofluorescence, Flow Cytometry (FACS) and Immunohistochemistry.

Secretory phospholipase A2 receptor (PLA2R), also known as 180 kDa secretory phospholipase A2 receptor, C-type lectin domain family 13 member C or M-type receptor, is a type I transmembrane glycoprotein member of the mannose receptor (MR) family. The MR family characterize with a large extracellular glycosylated region comprising an N-terminal cysteine-rich domain (CysR), a fibronectin-like type II domain (FnII), and eight to ten C-type lectin-like domains (CTLD).[5]

PLA2R acts as a receptor for secretory phosholipase A2 (sPLA2) allowing its removal from circulation, thus regulating its biological effect. Group IB sPLA2 (sPLA2-IB), but not group sPLA2-IA, acts as an endogenous PLA2R ligand to induce cell proliferation, cell migration and lipid mediator production.[1]

PLA2R is also involved in clearance followed by suppression of their potent enzymatic activities of sPLA2s from the blood, including group sPLA2-X and a particular type of snake venom sPLA2. The soluble circulating form of PLA2R is constitutively present as anendogenous inhibitor of sPLA2s.[1]

Anti-PLA2R antibody, Mouse monoclonal, predominantly IgG4 subclass, were first described in 2009 as the major cause (~70-75%) for idiopathic membranous nephropathy (IMN) related nephrotic syndrome in adults. Nevertheless, PLA2R antigenicity is rare in other glomerulonephritides. PLA2R is expressed in kidney podocytes of normal human glomeruli, in IMN patients PLA2R is colocalized to immune deposits in glomeruli along with IgG4.[2]
The common method of quantification autoimmune reaction in IMN patients is by measurements of the anti-PLA2R auto-antibodies in serum and is used to diagnosis and monitor patient response to immunosuppressive therapy.[2-3,5] In new studies it was reported that the diagnosis of primary membranous nephropathy (MN) based on the detection of anti-PLA2R antibodies maybe a major obstacle since their level have been shown to be inconsistent with regard to their rapid clearance from circulation and their false positivity in a few patients with secondary MN, whereas the PLA2R antigen detection in a renal biopsy was almost persistent in primary MN. Thus, monoclonal anti-PLA2R antibody can be a useful tool for PLA2R antigen detection and the diagnosis of primary MN.[4]

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

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 1-2 μg/mL is recommended using partial recombinant human PLA2R1 protein (predicted ~150kDa).

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

References

1. Hanasaki K. and Arita H., *Prostaglandins Other Lipid Mediat.*, **68-69,** 71-82 (2002).
2. Beck LH Jr., et al., *N Engl J Med.,* **361**, 11-21 (2009).
3. Cattran DC. and Brenchley PE., *Kidney Int.*, **91**, 566-74 (2017).
4. Roy S., et al., *Nephron Extra.*, **7**, 1-9 (2017).
5. Obrisca B., et al., *Biomed Res Int.*, **2015**, 249740 (2015).

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