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Product Information

Anti-Phospholipase A2, Secretory Group V antibody, Mouse monoclonal
clone MCL-3G1, purified from hybridoma cell culture

Product Number **P5242**

Product Description

Monoclonal Anti-Phospholipase A_2, Secretory Group V (hVPLA$_2$) (mouse IgG1 isotype) is derived from the MCL-3G1 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with a recombinant W79A mutant of hVPLA$_2$.[1] The isotype is determined using Sigma ImmunoType™ Kit (Product Code ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Product Code ISO-2). The antibody is purified from culture supernatant of hybridoma cells grown in a bioreactor.

Monoclonal Anti-Phospholipase A_2, Secretory Group V (hVPLA$_2$) recognizes only the human hVPLA$_2$ and does not cross-react with either hIIaPLA$_2$ or group IV cytosolic PLA$_2$.[1] The product may be used in ELISA and immunoblotting (14 kDa).[1]

Phospholipase A_2 (PLA$_2$) designates a class of enzymes that hydrolyzes the *sn-2* ester of glycerophospholipids to produce a fatty acid and a lysophospholipid. Nine different groups of mammalian PLA$_2$s have been identified. Group Ia PLA$_2$, also known as pancreatic PLA$_2$, is found not only in the digestive fluids, but also in non-digestive tissues including spleen. Group IIa PLA$_2$ was the first non-pancreatic mammalian PLA$_2$ to be identified as a component of the synovial fluid and platelets. Group IIc PLA$_2$ gene encodes for a functional enzyme in mice, but in humans it exists as a pseudo-gene. Group V PLA$_2$ is an active enzyme secreted by macrophages and a variety of other cells. Group X PLA$_2$ has been identified in a variety of mammalian tissues.

All of these PLA$_2$s have similar size, three-dimensional structure, and active site residues. Together they represent a family of secreted PLA$_2$s that require millimolar amounts of calcium. Groups IV and VI PLA$_2$ are intracellular enzymes that act on long-chain phospholipids. Groups VII and VIII PLA$_2$ are highly specific for phospholipids with short *sn-2* chains that are thought to terminate the action of platelet activation factor by hydrolyzing the *sn-2* ester.

Human group-V PLA$_2$ (hVPLA$_2$) binds zwitterionic phosphatidylcholine (PC) membranes and hydrolyzes PC molecules much more efficiently than human group-IIa PLA$_2$ (hIIaPLA$_2$). This suggests that hVPLA$_2$ is better suited than hIIaPLA$_2$ for acting on the outer plasma membrane of mammalian cells that are composed largely of zwitterionic PC and sphingomyelin. Exogenous hVPLA$_2$ has much greater activity than hIIaPLA$_2$ with respect to releasing fatty acids and eliciting eicosanoid formation from various mammalian cells.[2] Monoclonal antibodies specific for hVPLA$_2$ are powerful tools for studying their distribution, cellular functions, and regulations.

Reagent

Monoclonal Anti-Phospholipase A_2, Secretory Group V (hVPLA2) is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 1% bovine serum albumin and 15 mM sodium azide.

Antibody Concentration: Approx. 1 mg/ml.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For prolonged storage, freeze in working aliquots at −20 °C. Repeated freezing and thawing is not recommended. Storage in frost-free freezers is also 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

A minimum working concentration of 1-2 μg/ml is determined by immunoblotting using a total cell extract from the mouse macrophage cell line P388.

Note: In order to obtain the best results using different techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

1. Munoz, N.M., et al., Hybridoma, **19,** 171, (2000).
2. Kim, K.P., et al., Biochem. J., **348**, 643, (2000).

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