SANTA CRUZ BIOTECHNOLOGY, INC.

group V PLA_2 (2A5): sc-20024

BACKGROUND

Phospholipase A_2s (PLA_2s) constitute a family of esterases that hydrolyze the sn-2-acyl ester bond in glycerophospholipid molecules. These enzymes are generally calcium-dependent and have been found both intra- and extracellularly. By hydrolyzing the sn-2 bond in glycerophospholipids, PLA_2s release fatty acids. One such fatty acid, arachidonic acid, generates the substrates for the initiation of the arachidonic acid cascade that produces various eicosanoids (i.e., prostaglandins, leukotrienes and thromboxanes), many of which are potent mediators of inflammation. PLA_2s include both the relatively low molecular weight group I, group II and group V enzymes and the form known as cytoplasmic PLA_2 ($cPLA_2$). $cPLA_2$ is present in macrophages, and hydrolyzes the sn-2 fatty acyl ester bond of phospholipids to produce a free fatty acid and a lysophospholid.

REFERENCES

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2. Dennis, E.A. 1990. Phospholipase A_2: role and function in inflammation. Adv. Exp. Med. Biol. 275: 1-25.
3. Heinrikson, R.L. and Kezdy, F. 1990. A novel bifunctional mechanism of surface recognition by phospholipase A_2. Adv. Exp. Med. Biol. 279: 37-47.
4. Clark, J.D., Milona, N. and Knopf, J.L. 1990. Purification of a 110-kilodalton cytosolic phospholipase A_2 from the human monocytic cell line U937. Proc. Natl. Acad. Sci. USA 87: 7708-7712.
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6. Mukherjee, A.B., Cordella-Miele, E. and Miele, L. 1992. Regulation of extracellular phospholipase A_2 activity: implications for inflammatory diseases. DNA Cell Biol. 11: 233-243.
7. Wooton-Kee, C.R., Boyanovsky, B.B., Nasser, M.S., de Villiers, W.J. and Webb, N.R. 2004. Group V $sPLA_2$ hydrolysis of low-density lipoprotein results in spontaneous particle aggregation and promotes macrophage foam cell formation. Arterioscler. Thromb. Vasc. Biol. 24: 762-767.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

CHROMOSOMAL LOCATION

Genetic locus: PLA2G5 (human) mapping to 1p36.13.

SOURCE

group V PLA_2 (2A5) is a mouse monoclonal antibody raised against W79A mutant of $VPLA_2$ of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

group V PLA_2 (2A5) is recommended for detection of group V PLA_2 of human origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for group V PLA_2 siRNA (h): sc-44023, group V PLA_2 shRNA Plasmid (h): sc-44023-SH and group V PLA_2 shRNA (h) Lentiviral Particles: sc-44023-V.

Molecular Weight of group V PLA_2: 14 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RESEARCH USE

For research use only, not for use in diagnostic procedures.