

# group V PLA<sub>2</sub> (C-4): sc-393606

## BACKGROUND

Phospholipase A<sub>2</sub>s (PLA<sub>2</sub>s) 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<sub>2</sub>s 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<sub>2</sub>s include both the relatively low molecular weight group I, group II and group V enzymes and the form known as cytoplasmic PLA<sub>2</sub> (cPLA<sub>2</sub>). cPLA<sub>2</sub> is present in macrophages, and hydrolyzes the sn-2 fatty acyl ester bond of phospholipids to produce a free fatty acid and a lysophospholipid.

## REFERENCES

1. Heinrikson, R.L., et al. 1977. Amino acid sequence of phospholipase A<sub>2</sub>-α from the venom of *Crotalus adamanteus*. A new classification of phospholipases A<sub>2</sub> based upon structural determinants. *J. Biol. Chem.* 252: 4913-4921.
2. Dennis, E.A. 1990. Phospholipase A<sub>2</sub>: 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<sub>2</sub>. *Adv. Exp. Med. Biol.* 279: 37-47.
4. Clark, J.D., et al. 1990. Purification of a 110-kilodalton cytosolic phospholipase A<sub>2</sub> from the human monocytic cell line U937. *Proc. Natl. Acad. Sci. USA* 87: 7708-7712.
5. Sharp, J.D., et al. 1991. Molecular cloning and expression of human Ca<sup>2+</sup>-sensitive cytosolic phospholipase A<sub>2</sub>. *J. Biol. Chem.* 266: 14850-14853.

## CHROMOSOMAL LOCATION

Genetic locus: PLA2G5 (human) mapping to 1p36.13; Pla2g5 (mouse) mapping to 4 D3.

## SOURCE

group V PLA<sub>2</sub> (C-4) is a mouse monoclonal antibody raised against amino acids 1-137 representing full length group V PLA<sub>2</sub> of mouse origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

group V PLA<sub>2</sub> (C-4) is available conjugated to agarose (sc-393606 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393606 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393606 PE), fluorescein (sc-393606 FITC), Alexa Fluor<sup>®</sup> 488 (sc-393606 AF488), Alexa Fluor<sup>®</sup> 546 (sc-393606 AF546), Alexa Fluor<sup>®</sup> 594 (sc-393606 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-393606 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-393606 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-393606 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

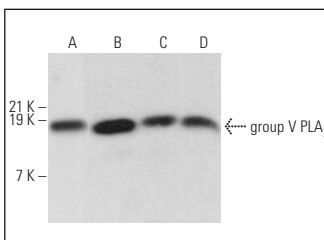
group V PLA<sub>2</sub> (C-4) is recommended for detection of group V PLA<sub>2</sub> of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for group V PLA<sub>2</sub> siRNA (h): sc-44023, group V PLA<sub>2</sub> siRNA (m): sc-62825, group V PLA<sub>2</sub> siRNA (r): sc-270119, group V PLA<sub>2</sub> shRNA Plasmid (h): sc-44023-SH, group V PLA<sub>2</sub> shRNA Plasmid (m): sc-62825-SH, group V PLA<sub>2</sub> shRNA Plasmid (r): sc-270119-SH, group V PLA<sub>2</sub> shRNA (h) Lentiviral Particles: sc-44023-V, group V PLA<sub>2</sub> shRNA (m) Lentiviral Particles: sc-62825-V and group V PLA<sub>2</sub> shRNA (r) Lentiviral Particles: sc-270119-V.

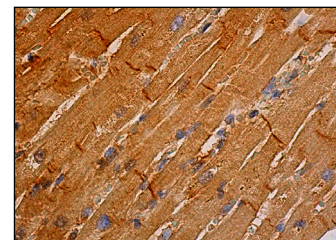
Molecular Weight of group V PLA<sub>2</sub>: 14 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, HeLa whole cell lysate: sc-2200 or BC<sub>3</sub>H1 cell lysate: sc-2299.

## DATA



group V PLA<sub>2</sub> (C-4): sc-393606. Western blot analysis of group V PLA<sub>2</sub> expression in HL-60 (A), HeLa (B), BC<sub>3</sub>H1 (C) and A-673 (D) whole cell lysates.



group V PLA<sub>2</sub> (C-4): sc-393606. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic and intercalated disc staining of myocytes.

## SELECT PRODUCT CITATIONS

1. Rubio, J.M., et al. 2015. Group V secreted phospholipase A<sub>2</sub> is upregulated by IL-4 in human macrophages and mediates phagocytosis via hydrolysis of ethanolamine phospholipids. *J. Immunol.* 194: 3327-3339.

## STORAGE

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

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.