

# group II sPLA<sub>2</sub> (SCACC353): sc-58363

## BACKGROUND

Phospholipases catalyze the release of fatty acids from phospholipids. One member of the phospholipase family, iPLA<sub>2</sub>, is detected as a membrane-bound protein with multiple smaller isoforms, which result from alternative splicing. Two isoforms, ankyrin-iPLA<sub>2</sub>-1 and 2, lack the catalytic domain and are thought to be involved in the negative regulation of iPLA<sub>2</sub> activity. The SH-iPLA<sub>2</sub> isoform is cytoplasmically localized. The human gene encoding iPLA<sub>2</sub> maps to chromosome 22q13.1. Another phospholipase, sPLA<sub>2</sub>, belongs to a family of secretory phospholipases A<sub>2</sub>, which represent an expanding family of related enzymes. sPLA<sub>2</sub> has both membrane bound and secreted forms that are encoded by a single gene. sPLA<sub>2</sub> is involved in the regulation of phospholipid metabolism in biomembranes and in eicosanoid biosynthesis.

## REFERENCES

1. Scott, D.L., White, S.P., Browning, J.L., Rosa, J.J., Gelb, M.H. and Sigler, P.B. 1991. Structures of free and inhibited human secretory phospholipase A<sub>2</sub> from inflammatory exudate. *Science* 254: 1007-1010.
2. Lehninger, A., Nelson, A. and Cox, M. 1993. *Principles of Biochemistry*, Second Edition. New York: Worth Publishers.
3. Cupillard, L., Koumanov, K., Mattei, M.G., Lazdunski, M. and Lambeau, G. 1997. Cloning, chromosomal mapping, and expression of a novel human secretory phospholipase A<sub>2</sub>. *J. Biol. Chem.* 272: 15745-15752.
4. Kitadokoro, K., Hagishita, S., Sato, T., Ohtani, M. and Miki, K. 1998. Crystal structure of human secretory phospholipase A<sub>2</sub>-IIA complex with the potent indolizine inhibitor 120-1032. *J. Biochem.* 123: 619-623.
5. Ma, Z., Wang, X., Nowatzke, W., Ramanadham, S. and Turk, J. 1999. Human pancreatic islets express mRNA species encoding two distinct catalytically active isoforms of group VI phospholipase A<sub>2</sub> (iPLA<sub>2</sub>) that arise from an exon-skipping mechanism of alternative splicing of the transcript from the iPLA<sub>2</sub> gene on chromosome 22q13.1. *J. Biol. Chem.* 274: 9607-9616.
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## CHROMOSOMAL LOCATION

Genetic locus: PLA2G2A (human) mapping to 1p36.13.

## SOURCE

group II sPLA<sub>2</sub> (SCACC353) is a mouse monoclonal antibody raised against full length group II sPLA<sub>2</sub> of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide, 0.1% gelatin, 5% glycerol and < 0.1% stabilizer protein.

## STORAGE

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

## APPLICATIONS

group II sPLA<sub>2</sub> (SCACC353) is recommended for detection of group II sPLA<sub>2</sub> of human origin by Western Blotting (starting dilution 1:200, 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); non cross-reactive with type V sPLA<sub>2</sub>.

Suitable for use as control antibody for group II sPLA<sub>2</sub> siRNA (h): sc-43817, group II sPLA<sub>2</sub> shRNA Plasmid (h): sc-43817-SH and group II sPLA<sub>2</sub> shRNA (h) Lentiviral Particles: sc-43817-V.

Molecular Weight of group II sPLA<sub>2</sub>: 14 kDa.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## SELECT PRODUCT CITATIONS

1. Pierre, J.F., Heneghan, A.F., Tsao, F.H., Sano, Y., Jonker, M.A., Omata, J., Lan, J. and Kudsk, K.A. 2011. Route and type of nutrition and surgical stress influence secretory phospholipase A<sub>2</sub> secretion of the murine small intestine. *JPEN J. Parenter. Enteral Nutr.* 35: 748-756.
2. Shu, S., Xu, Y., Xie, L. and Ouyang, Y. 2017. The role of C/EBPβ phosphorylation in modulating membrane phospholipids repairing in LPS-induced human lung/bronchial epithelial cells. *Gene* 629: 76-85.

## 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.