

group IVD sPLA₂ (P-13): sc-160397

BACKGROUND

Phospholipase A₂s (PLA₂s) 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, PLA₂s release fatty acids. One such fatty acid, arachidonic acid, generates the substrates for the initiation of the arachidonic acid cascade that produces various eicosanoids, many of which are potent mediators of inflammation. Group IVD sPLA₂, also known as PLA2G4D (phospholipase A₂ group IVD) or cPLA₂-δ (cytosolic phospholipase A₂ δ), is a 818 amino acid calcium-dependent phospholipase that contains one PLA₂c domain, a C2 domain and exists as two alternatively spliced isoforms. A peripheral membrane protein, group IVD sPLA₂ is suggested to play a role in the inflammation of psoriatic lesions, and catalyzes the reaction of phosphatidylcholine and water into 1-acylglycerophosphocholine and carboxylate.

REFERENCES

- Mavoungou, E., Georges-Courbot, M.C., Poaty-Mavoungou, V., Nguyen, H.T., Yaba, P., Delicat, A., Georges, A.J. and Russo-Marie, F. 1997. HIV and SIV envelope glycoproteins induce phospholipase A₂ activation in human and macaque lymphocytes. *J. Acquir. Immune Defic. Syndr. Hum. Retrovirol.* 16: 1-9.
- Schröder, H.C., Perovic, S., Kavsan, V., Ushijima, H. and Müller, W.E. 1998. Mechanisms of prionSc- and HIV-1 gp120 induced neuronal cell death. *Neurotoxicology* 19: 683-688.
- Ishizaki, J., Suzuki, N., Higashino, K., Yokota, Y., Ono, T., Kawamoto, K., Fujii, N., Arita, H. and Hanasaki, K. 1999. Cloning and characterization of novel mouse and human secretory phospholipase A₂s. *J. Biol. Chem.* 274: 24973-24979.
- Chiba, H., Michibata, H., Wakimoto, K., Seishima, M., Kawasaki, S., Okubo, K., Mitsui, H., Torii, H. and Imai, Y. 2004. Cloning of a gene for a novel epithelium-specific cytosolic phospholipase A₂, cPLA₂δ, induced in psoriatic skin. *J. Biol. Chem.* 279: 12890-12897.
- Tao, R., Yu, Y., Zhang, X., Shi, J., Guo, Y., Wang, C., Han, B., Xu, Q., Shang, H., Zhang, X., Xie, L., Liu, S., Ju, G., Shen, Y. and Wei, J. 2005. A family based study of the genetic association between the PLA2G4D gene and schizophrenia. *Prostaglandins Leukot. Essent. Fatty Acids* 73: 419-422.
- Yu, Q., Shi, J.P., Kou, C.G., Meng, X.F. and Yu, Y.Q. 2008. Study on the genetic association between the polymorphism of cytosolic phospholipase A₂ family genes and schizophrenia. *Zhonghua Liu Xing Bing Xue Za Zhi.* 29: 173-176.
- Online Mendelian Inheritance in Man, OMIM™. 2009. Johns Hopkins University, Baltimore, MD. MIM Number: 612864. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: Pla2g4d (mouse) mapping to 2 E5.

RESEARCH USE

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

SOURCE

group IVD sPLA₂ (P-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a cytoplasmic domain of group IVD sPLA₂ of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-160397 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

group IVD sPLA₂ (P-13) is recommended for detection of group IVD sPLA₂ of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (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 other Phospholipase A₂ family members.

Suitable for use as control antibody for group IVD sPLA₂ siRNA (m): sc-145776, group IVD sPLA₂ shRNA Plasmid (m): sc-145776-SH and group IVD sPLA₂ shRNA (m) Lentiviral Particles: sc-145776-V.

Molecular Weight of group IVD sPLA₂: 92 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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 or our catalog for detailed protocols and support products.