SANTA CRUZ BIOTECHNOLOGY, INC.

cPLA$_2$ (N-216): sc-438

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Phospholipase A$_2$s (PLA$_2$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$_2$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$_2$s include both the relatively low molecular weight type I and type II enzymes and the form known as cytoplasmic PLA$_2$ (cPLA$_2$). cPLA$_2$ is present in the cytosol of various cells and tissues including platelets, macrophages and monoblasts and preferentially hydrolyzes the sn-2 position of phospholipid molecules, releasing free arachidonate.

CHROMOSOMAL LOCATION

Genetic locus: PLA2G4A (human) mapping to 1q31.1; Pla2g4a (mouse) mapping to 1 G1.

SOURCE

cPLA$_2$ (N-216) is a rabbit polyclonal antibody raised against amino acids 1-216 of cPLA$_2$ of human origin.

PRODUCT

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

APPLICATIONS

cPLA$_2$ (N-216) is recommended for detection of cytosolic PLA$_2$ of mouse, rat and 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).

cPLA$_2$ (N-216) is also recommended for detection of cytosolic PLA$_2$ in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for cPLA$_2$ siRNA (h): sc-29280, cPLA$_2$ siRNA (m): sc-35098, cPLA$_2$ shRNA Plasmid (h): sc-29280-SH, cPLA$_2$ shRNA Plasmid (m): sc-35098-SH, cPLA$_2$ shRNA (h) Lentiviral Particles: sc-29280-V and cPLA$_2$ shRNA (m) Lentiviral Particles: sc-35098-V.

Molecular Weight of cPLA$_2$: 85-114 kDa.

Positive Controls: cPLA$_2$ (m): 293T Lysate: sc-119430, NIH/3T3 whole cell lysate: sc-2210 or HeLa whole cell lysate: sc-2200.

RESEARCH USE

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

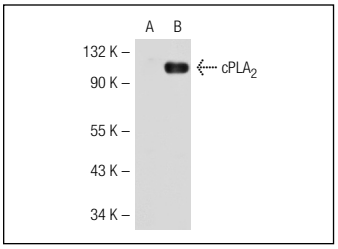
PROTOCOLS

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

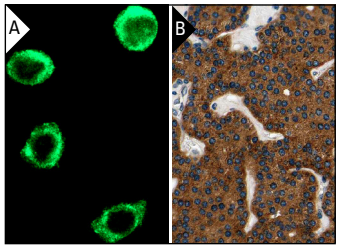
STORAGE

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

DATA



cPLA$_2$ (N-216): sc-438. Western blot analysis of cPLA$_2$ expression in non-transfected: sc-117752 (**A**) and mouse cPLA$_2$ transfected: sc-119430 (**B**) 293T whole cell lysates.



cPLA$_2$ (N-216): sc-438. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic staining (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human parathyroid gland tissue showing cytoplasmic staining of glandular cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (**B**).

SELECT PRODUCT CITATIONS

1. Bunt, G., et al. 1997. Ultrastructural localization of cPLA$_2$ in unstimulated and EGF/A$_2$3187 stimulated fibroblasts. J. Cell Sci. 110: 2449-2459.
2. Hill, J.M., et al. 2009. HSV-1 infection of human brain cells induces miRNA-146a and Alzheimer-type inflammatory signaling. Neuroreport 20: 1500-1505.
3. Kobayashi, T., et al. 2009. Angiotensin II type 1 receptor blocker telmisartan reduces cerebral infarct volume and peri-infarct cytosolic phospholipase A$_2$ level in experimental stroke. J. Neurotrauma 26: 2355-2364.
4. Ulmann, L., et al. 2010. P2X4 receptors mediate PGE2 release by tissue-resident macrophages and initiate inflammatory pain. EMBO J. 29: 2290-2300.
5. Ara, T., et al. 2010. Preventive effects of a kampo medicine, orento on inflammatory responses in lipopolysaccharide treated human gingival fibroblasts. Biol. Pharm. Bull. 33: 611-616.
6. Shibata, N., et al. 2010. Increased expression and activation of cytosolic phospholipase A$_2$ in the spinal cord of patients with sporadic amyotrophic lateral sclerosis. Acta Neuropathol. 119: 345-354.
7. Kishimoto, K., et al. 2010. Cytosolic phospholipase A$_2$ α amplifies early cyclooxygenase-2 expression, oxidative stress and MAP kinase phosphorylation after cerebral ischemia in mice. J. Neuroinflammation 7: 42.
8. Reed, K.A., et al. 2011. Functional characterization of mutations in inherited human cPLA$_2$ deficiency. Biochemistry 50: 1731-1738.