SANTA CRUZ BIOTECHNOLOGY, INC.

$cPLA_2$ (E-1): sc-376618

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 eicosa-noids (i.e. prostaglandins, leukotrienes and thromboxanes), many of which are potent mediators of inflammation. PLA_2s 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

$cPLA_2$ (E-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 721-752 at the C-terminus of $cPLA_2$ 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.

Blocking peptide available for competition studies, sc-376618 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

$cPLA_2$ (E-1) is recommended for detection of cytosolic PLA_2 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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: NIH/3T3 whole cell lysate: sc-2210, A549 cell lysate: sc-2413 or EOC 20 whole cell lysate: sc-364187.

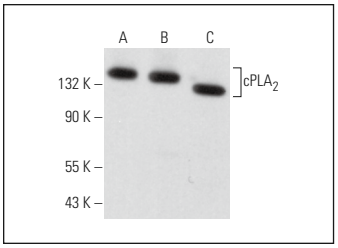
STORAGE

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

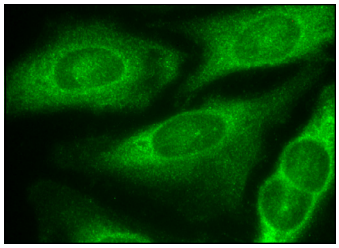
RESEARCH USE

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

DATA



$cPLA_2$ (E-1): sc-376618. Western blot analysis of $cPLA_2$ expression in NIH/3T3 (**A**), A549 (**B**) and EOC 20 (**C**) whole cell lysates.



$cPLA_2$ (E-1): sc-376618. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Bautista-Perez, R., et al. 2015. Involvement of neutral sphingomyelinase in the Angiotensin II signaling pathway. Am. J. Physiol. Renal Physiol. 308: F1178-F1187.
2. Pauls, S.D., et al. 2020. α-linolenic acid enhances the phagocytic and secretory functions of alternatively activated macrophages in part via changes to the oxylipin profile. Int. J. Biochem. Cell Biol. 119: 105662.
3. Cammisotto, V., et al. 2020. PCSK9 regulates Nox2-mediated platelet activation via CD36 receptor in patients with atrial fibrillation. Antioxidants 9: 296.
4. Ye, S., et al. 2021. Quantitative proteomics analysis of glioblastoma cell lines after lncRNA HULC silencing. Sci. Rep. 11: 12587.
5. Wang, S., et al. 2022. Calcium-dependent cytosolic phospholipase A_2 activation is implicated in neuroinflammation and oxidative stress associated with ApoE4. Mol. Neurodegener. 17: 42.
6. Zhang, H., et al. 2023. Elamipretide alleviates pyroptosis in traumatically injured spinal cord by inhibiting $cPLA_2$-induced lysosomal membrane permeabilization. J. Neuroinflammation 20: 6.
7. Parra, L.G., et al. 2024. Cytosolic phospholipase A_2 regulates lipid homeostasis under osmotic stress through PPARγ. FEBS J. 291: 722-743.

PROTOCOLS

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

CONJUGATES

See **$cPLA_2$ (4-4B-3C): sc-454** for $cPLA_2$ antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.