

cPLA₂ (E-3): sc-137069

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 (i.e. prostaglandins, leukotrienes and thromboxanes), many of which are potent mediators of inflammation. PLA₂s include both the relatively low molecular weight type I and type II enzymes and the form known as cytoplasmic PLA₂ (cPLA₂). cPLA₂ 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.

REFERENCES

1. Heinrikson, R.L., et al. 1977. Amino acid sequence of phospholipase A₂-α from the venom of *Crotalus adamanteus*. A new classification of phospholipases A₂ based upon structural determinants. *J. Biol. Chem.* 252: 4913-4921.
2. Leslie, C.C., et al. 1988. Properties and purification of an arachidonyl hydrolyzing phospholipase A₂ from a macrophage cell line, RAW 264.7. *Biochem. Biophys. Acta* 963: 476-492.

CHROMOSOMAL LOCATION

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

SOURCE

cPLA₂ (E-3) is a mouse monoclonal antibody raised against amino acids 1-216 of cPLA₂ of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

cPLA₂ (E-3) is recommended for detection of cytosolic PLA₂ 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 cPLA₂ siRNA (h): sc-29280, cPLA₂ siRNA (m): sc-35098, cPLA₂ shRNA Plasmid (h): sc-29280-SH, cPLA₂ shRNA Plasmid (m): sc-35098-SH, cPLA₂ shRNA (h) Lentiviral Particles: sc-29280-V and cPLA₂ shRNA (m) Lentiviral Particles: sc-35098-V.

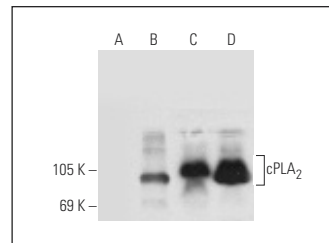
Molecular Weight of cPLA₂: 85-114 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, HeLa whole cell lysate: sc-2200 or cPLA₂ (m): 293T Lysate: sc-119430.

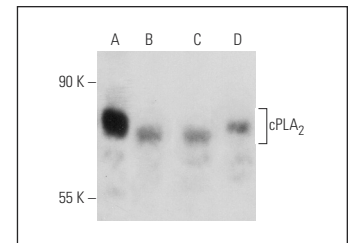
RECOMMENDED SUPPORT REAGENTS

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.

DATA



cPLA₂ (E-3): sc-137069. Western blot analysis of cPLA₂ expression in non-transfected 293T: sc-117752 (A), mouse cPLA₂ transfected 293T: sc-119430 (B), HeLa (C) and NIH/3T3 (D) whole cell lysates.



cPLA₂ (E-3): sc-137069. Western blot analysis of cPLA₂ expression in RPMI2650 (A), RAW 264.7 (B), 3T3-L1 (C) and NRK (D) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Wu, H., et al. 2018. Adenoviruses-mediated RNA interference targeting cytosolic phospholipase A₂α attenuates focal ischemic brain damage in mice. *Mol. Med. Rep.* 17: 5601-5610.
2. Wang, S., et al. 2021. Calcium-dependent cytosolic phospholipase A₂ activation is implicated in neuroinflammation and oxidative stress associated with ApoE4. *Mol. Neurodegener.* 16: 26.

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 for detailed protocols and support products.



See **cPLA₂ (4-4B-3C): sc-454** for cPLA₂ antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.