SANTA CRUZ BIOTECHNOLOGY, INC.

LYPLA3 (H-167): sc-135297

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

LYPLA3 (lysophospholipase 3) also referred to as ACS, LLPL or LPLA2 (lysosomal phospholipase A2), is ubiquitously expressed with highest expression in kidney, placenta, pancreas, testis, spleen, heart and skeletal muscle. LYPLA3, which localizes to lysosomes, is calcium-independent and has an acidic pH optimum. LYPLA3 transacylates ceramide and increases lysosomal membrane permeability to both potassium ions and protons. It may play a critical role in pulmonary surfactant phospholipid degradation due to its high specificity towards phosphatidylethanolamine and phosphatidylcholine in alveolar macrophages. LYPLA3 may also enhance lysosome osmotic sensitivity, resulting in the destabilization of the enzyme by causing leakage and inducing apoptosis. LYPLA3 is thought to remodel acyl groups and modulate the biological and pharmacological activities of some lipophilic alcohols.

REFERENCES

1. Hiraoka, M., et al. 2002. Cloning and characterization of a lysosomal phospholipase A_2, 1-O-acylceramide synthase. J. Biol. Chem. 277: 10090-10099.
2. Abe, A., et al. 2004. Lysosomal phospholipase A2 is selectively expressed in alveolar macrophages. J. Biol. Chem. 279: 42605-42611.
3. Taniyama, Y., et al. 2005. Loss of lyso-phospholipase 3 increases atherosclerosis in apolipoprotein E-deficient mice. Biochem. Biophys. Res. Commun. 330: 104-110.
4. Hiraoka, M., et al. 2005. Structure and function of lysosomal phospholipase A_2: identification of the catalytic triad and the role of cysteine residues. J. Lipid Res. 46: 2441-2447.
5. Schaloske, R.H. and Dennis, E.A. 2006. The phospholipase A_2 superfamily and its group numbering system. Biochim. Biophys. Acta 1761: 1246-1259.
6. Wang, J.W., et al. 2006. Effects of phospholipase A_2 on the lysosomal ion permeability and osmotic sensitivity. Chem. Phys. Lipids 144: 117-126.
7. Abe, A., et al. 2006. Positional specificity of lysosomal phospholipase A_2. J. Lipid Res. 47: 2268-2279.

CHROMOSOMAL LOCATION

Genetic locus: PLA2G15 (human) mapping to 16q22.1; Pla2g15 (mouse) mapping to 8 D3.

SOURCE

LYPLA3 (H-167) is a rabbit polyclonal antibody raised against amino acids 246-412 mapping at the C-terminus of LYPLA3 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.

STORAGE

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

APPLICATIONS

LYPLA3 (H-167) is recommended for detection of LYPLA3 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

LYPLA3 (H-167) is also recommended for detection of LYPLA3 in additional species, including equine and canine.

Suitable for use as control antibody for LYPLA3 siRNA (h): sc-93270, LYPLA3 siRNA (m): sc-149182, LYPLA3 shRNA Plasmid (h): sc-93270-SH, LYPLA3 shRNA Plasmid (m): sc-149182-SH, LYPLA3 shRNA (h) Lentiviral Particles: sc-93270-V and LYPLA3 shRNA (m) Lentiviral Particles: sc-149182-V.

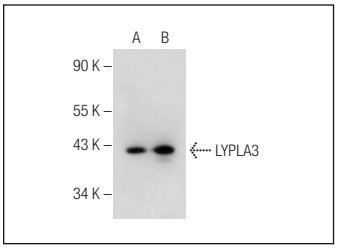
Molecular Weight of LYPLA3: 42 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or K-562 whole cell lysate: sc-2203.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



LYPLA3 (H-167): sc-135297. Western blot analysis of LYPLA3 expression in HeLa (**A**) and K-562 (**B**) whole cell lysates.

RESEARCH USE

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