SANTA CRUZ BIOTECHNOLOGY, INC.

15-LO2 (D-9): sc-271290

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Lipoxygenases are a family of enzymes which dioxygenate unsaturated fatty acids, thus initiating lipoperoxidation of membranes, the synthesis of signalling molecules as well as inducing structural and metabolic changes in the cell. The Lox enzymes in mammals, 12-LO and 15-LO, are classified with respect to their positional specificity of the deoxygenation of their most common substrate, arachidonic acid. The metabolism of arachidonic acid leads to the generation of biologically active metabolites that have been implicated in cell growth and proliferation, as well as survival and apoptosis. 15-Lipoxygenase acts in physiological membrane remodeling and the pathogenesis of atherosclerosis, inflammation and carcinogenesis. It is highly regulated and expressed in a tissue- and cell-type-specific fashion. IL-4 and IL-13 play important roles in trans-activating the 15-LO gene. Overexpression of 15-LO type 1 in prostate cancer contributes to the cancer progression by regulating IGF-1R expression and activation. 15-lipoxygenase, type II (15-LO2) is important for the conversion of arachidonic acid to 15S-hydroperoxyeicosatetraenoic acid. It is a cytoplasmic protein expressed primarily in cornea, lung, hair and prostate.

CHROMOSOMAL LOCATION

Genetic locus: ALOX15B (human) mapping to 17p13.1; Alox8 (mouse) mapping to 11 B3.

SOURCE

15-LO2 (D-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 423-452 within an internal region of 15-LO2 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.

15-LO2 (D-9) is available conjugated to agarose (sc-271290 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271290 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271290 PE), fluorescein (sc-271290 FITC), Alexa Fluor® 488 (sc-271290 AF488), Alexa Fluor® 546 (sc-271290 AF546), Alexa Fluor® 594 (sc-271290 AF594) or Alexa Fluor® 647 (sc-271290 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271290 AF680) or Alexa Fluor® 790 (sc-271290 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-271290 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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 for detailed protocols and support products.

APPLICATIONS

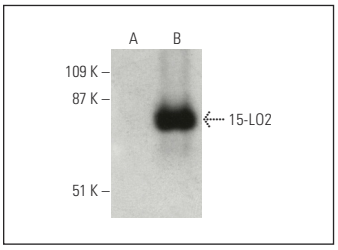
15-LO2 (D-9) is recommended for detection of 15-LO2 splice variants a, b and c of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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).

Suitable for use as control antibody for 15-LO2 siRNA (h): sc-45626, 15-LO2 siRNA (m): sc-45627, 15-LO2 shRNA Plasmid (h): sc-45626-SH, 15-LO2 shRNA Plasmid (m): sc-45627-SH, 15-LO2 shRNA (h) Lentiviral Particles: sc-45626-V and 15-LO2 shRNA (m) Lentiviral Particles: sc-45627-V.

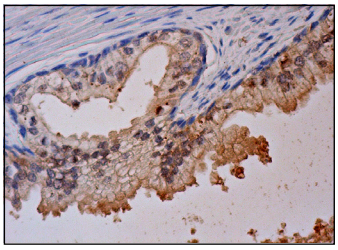
Molecular Weight of 15-LO2: 75 kDa.

Positive Controls: 15-LO2 (h): 293T Lysate: sc-113863 or HeLa whole cell lysate: sc-2200.

DATA



15-LO2 (D-9) HRP: sc-271290 HRP. Direct western blot analysis of 15-LO2 expression in non-transfected: sc-117752 (**A**) and human 15-LO2 transfected: sc-113863 (**B**) 293T whole cell lysates.



15-LO2 (D-9): sc-271290. Immunoperoxidase staining of formalin fixed, paraffin-embedded human prostate tissue showing cytoplasmic and nuclear staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Alfardan, R., et al. 2019. Impaired recovery from influenza A/X-31(H3N2) infection in mice with 8-lipoxygenase deficiency. Med. Sci. 7: 60.
2. Ebert, R., et al. 2020. Long-term stimulation of Toll-like receptor-2 and -4 upregulates 5-LO and 15-LO-2 expression thereby inducing a lipid mediator shift in human monocyte-derived macrophages. Biochim. Biophys. Acta Mol. Cell Biol. Lipids 1865: 158702.
3. Shum, M., et al. 2022. CF patients' airway epithelium and sex contribute to biosynthesis defects of pro-resolving lipids. Front. Immunol. 13: 915261.
4. Sabbir, M.G., et al. 2022. Growth state-dependent expression of arachidonate lipoxygenases in the human endothelial cell line EA.hy926. Cells 11: 2478.
5. Ong-Meang, V., et al. 2023. Extracellular vesicles produced by the cardiac microenvironment carry functional enzymes to produce lipid mediators *in situ*. Int. J. Mol. Sci. 24: 5866.

RESEARCH USE

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