

15-LO2 (D-6): sc-376871

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-LO 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 transactivating 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-LO, 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.

REFERENCES

1. Fletcher-Cieutat M., et al. 1985. Aspirin enhances the sensitivity of human platelet 12-lipoxygenase to inhibition by 15-HETE, an endogenous regulator. *Prostaglandins Leukot. Med.* 18: 255-259.
2. Kilty, I., et al. 1999. Differential characteristics of human 15-LO isozymes and a novel splice variant of 15S-LO. *Eur. J. Biochem.* 266: 83-93.
3. Tang, S., et al. 2002. Evidence that arachidonate 15-LO2 is a negative cell cycle regulator in normal prostate epithelial cells. *J. Biol. Chem.* 277: 16189-16201.
4. Lutteke, T., et al. 2003. LOX-DB—database on lipoxygenases. *Bioinformatics* 19: 2482-2483.
5. Pidgeon, G.P., et al. 2003. Overexpression of platelet-type 12-LO promotes tumor cell survival by enhancing $\alpha_v\beta_3$ and $\alpha_v\beta_5$ Integrin expression. *Cancer Res.* 63: 4258-4267.
6. Liu, C., et al. 2004. Transcriptional regulation of 15-LO expression by promoter methylation. *Exp. Cell Res.* 297: 61-67.
7. Kelavkar, U.P., et al. 2004. 15-lipoxygenase-1 expression upregulates and activates Insulin-like growth factor-1 receptor in prostate cancer cells. *Neoplasia* 6: 41-52.

CHROMOSOMAL LOCATION

Genetic locus: ALOX15B (human) mapping to 17p13.1.

SOURCE

15-LO2 (D-6) is a mouse monoclonal antibody raised against amino acids 146-200 mapping within an internal region of 15-LO2 of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

15-LO2 (D-6) is recommended for detection of 15-LO2 splice variants a, b, c and d of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 15-LO2 siRNA (h): sc-45626, 15-LO2 shRNA Plasmid (h): sc-45626-SH and 15-LO2 shRNA (h) Lentiviral Particles: sc-45626-V.

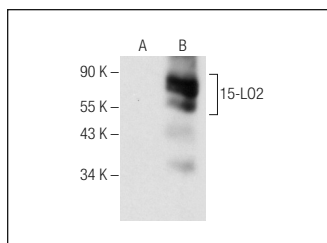
Molecular Weight of 15-LO2: 75 kDa.

Positive Controls: 15-LO2 (h): 293T Lysate: sc-113863, MCF7 whole cell lysate: sc-2206 or HeLa whole cell lysate: sc-2200.

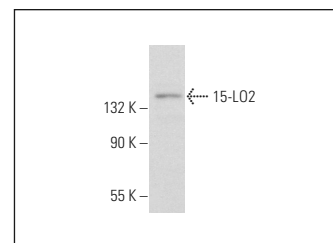
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



15-LO2 (D-6): sc-376871. 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-6): sc-376871. Western blot analysis of 15-LO2 expression in MCF7 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Shen, T., et al. 2013. Positive feedback-loop of telomerase reverse transcriptase and 15-lipoxygenase-2 promotes pulmonary hypertension. *PLoS ONE* 8: e83132.

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.