

12-LO (C-5): sc-365194

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. The 12-LO pathway is a regulator of cell survival and apoptosis and affects the expression and localization of the Integrin α_v/β_5 and Actin microfilaments in rat Walker 256 carcinosarcoma cells. Platelet-type 12-LO regulates the growth and survival of a number of cancer cells. Human platelets metabolize arachidonic acid via 12-lipoxygenase to 12-hydroxyeicosatetraenoic acid.

CHROMOSOMAL LOCATION

Genetic locus: ALOX12 (human) mapping to 17p13.1; Alox12 (mouse) mapping to 11 B3.

SOURCE

12-LO (C-5) is a mouse monoclonal antibody raised against amino acids 131-230 mapping within an internal region of 12-LO 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.

12-LO (C-5) is available conjugated to agarose (sc-365194 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365194 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365194 PE), fluorescein (sc-365194 FITC), Alexa Fluor® 488 (sc-365194 AF488), Alexa Fluor® 546 (sc-365194 AF546), Alexa Fluor® 594 (sc-365194 AF594) or Alexa Fluor® 647 (sc-365194 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365194 AF680) or Alexa Fluor® 790 (sc-365194 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

12-LO (C-5) is recommended for detection of 12-LO of mouse, rat and 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 12-LO siRNA (h): sc-45984, 12-LO siRNA (m): sc-45985, 12-LO shRNA Plasmid (h): sc-45984-SH, 12-LO shRNA Plasmid (m): sc-45985-SH, 12-LO shRNA (h) Lentiviral Particles: sc-45984-V and 12-LO shRNA (m) Lentiviral Particles: sc-45985-V.

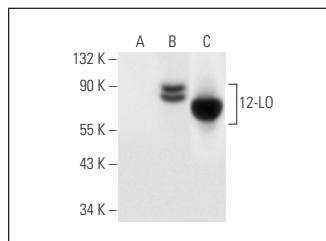
Molecular Weight of 12-LO: 76 kDa.

Positive Controls: 12-LO (m): 293T Lysate: sc-178202 or human platelet extract: sc-363773.

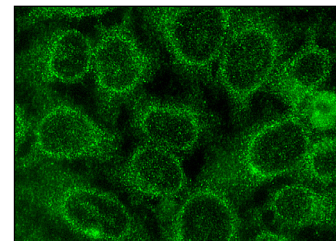
STORAGE

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

DATA



12-LO (C-5): sc-365194. Western blot analysis of 12-LO expression in non-transfected 293T: sc-117752 (A), mouse 12-LO transfected 293T: sc-178202 (B) whole cell lysates and human platelet extract (C).



12-LO (C-5): sc-365194. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

- Xu, X., et al. 2017. ITRAQ-based proteomics analysis of acute lung injury induced by oleic acid in mice. *Cell. Physiol. Biochem.* 44: 1949-1964.
- Park, G.B. and Kim, D. 2018. Cigarette smoke-induced EGFR activation promotes epithelial mesenchymal migration of human retinal pigment epithelial cells through regulation of the FAK-mediated Syk/Src pathway. *Mol. Med. Rep.* 17: 3563-3574.
- Chu, B., et al. 2019. ALOX12 is required for p53-mediated tumour suppression through a distinct ferroptosis pathway. *Nat. Cell Biol.* 21: 579-591.
- Tian, F., et al. 2020. 4-octyl itaconate protects against renal fibrosis via inhibiting TGF- β /Smad pathway, autophagy and reducing generation of reactive oxygen species. *Eur. J. Pharmacol.* 873: 172989.
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- Xue, Y., et al. 2020. Gigantol ameliorates CCl₄-induced liver injury via preventing activation of JNK/cPLA2/12-LOX inflammatory pathway. *Sci. Rep.* 10: 22265.
- Chen, D., et al. 2021. iPLA2 β -mediated lipid detoxification controls p53-driven ferroptosis independent of GPX4. *Nat. Commun.* 12: 3644.
- Sabbir, M.G., et al. 2021. Antisense overlapping long non-coding RNA regulates coding arachidonate 12-lipoxygenase gene by translational interference. *Biochim. Biophys. Acta Mol. Cell Biol. Lipids* 1866: 158987.
- Zuo, Y., et al. 2021. Ferritinophagy-mediated ferroptosis involved in paraquat-induced neurotoxicity of dopaminergic neurons: implication for neurotoxicity in PD. *Oxid. Med. Cell. Longev.* 2021: 9961628.

RESEARCH USE

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