

PRODUCT INFORMATION



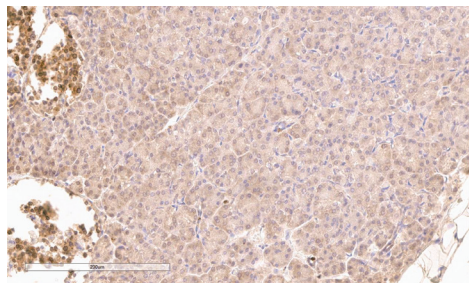
5-Lipoxygenase Polyclonal Antibody

Item No. 160402

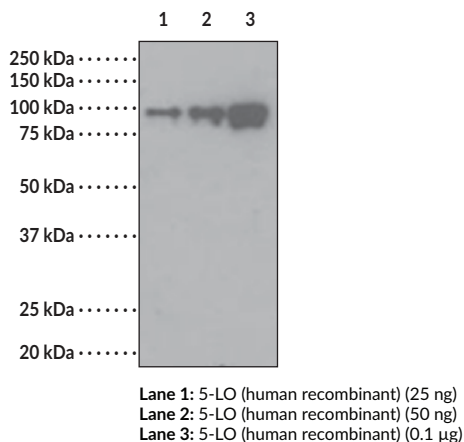
Overview and Properties

Contents: This vial contains 500 µl of peptide affinity-purified polyclonal antibody.
Synonyms: ALOX5, Arachidonate 5-Lipoxygenase, 5-LO, LOG5, 5-LOX
Immunogen: Synthetic peptide from an internal region of human 5-lipoxygenase
Cross Reactivity: (-) 12-Lipoxygenase and 15-lipoxygenase
Species Reactivity: (+) Human and porcine; other species not tested
Uniprot No.: P09917
Form: Liquid
Storage: -20°C (as supplied)
Stability: ≥3 years
Storage Buffer: PBS, pH 7.2, with 50% glycerol, and 0.02% sodium azide
Host: Rabbit
Applications: Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution for IHC is 1:40 and 1:200 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



Immunohistochemistry analysis of formalin-fixed, paraffin-embedded (FFPE) human pancreas tissue after heat-induced antigen retrieval in pH 6.0 citrate buffer. After incubation with Cayman's 5-Lipoxygenase Polyclonal Antibody (Item No. 160402) at a 1:40 dilution, slides were incubated with biotinylated secondary antibody, followed by alkaline phosphatase-streptavidin and chromogen (DAB).



WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

5-Lipoxygenase (5-LO) is an enzyme encoded by *ALOX5* in humans that is involved in leukotriene biosynthesis.¹ It is comprised of an N-terminal regulatory domain and a C-terminal catalytic domain and is primarily expressed in leukocytes. Increases in intracellular calcium levels or cellular stress induce translocation of 5-LO from the cytosol or nucleoplasm, depending on the cell type and 5-LO phosphorylation status, to the nuclear envelope, where it interacts with 5-LO-activating protein (FLAP), which transfers arachidonic acid (Item Nos. 90010 | 90010.1 | 10006607) to 5-LO.^{1,2} 5-LO catalyzes the conversion of arachidonic acid to 5(S)-HpETE (Item No. 44230) and then to leukotriene A₄ (LTA₄).³ Other substrates of 5-LO include 5,8,11,14,17-eicosapentaenoic acid, 5,8,11-eicosatrienoic acid, 5,8-eicosadienoic acid, 12-HpETE, and 15-HpETE. *Alox5* knockout mice are protected against arthritis and pulmonary inflammation.² Knockout of *Alox5* also protects apolipoprotein E-deficient hyperlipidemic mice from high-fat diet-induced hepatic injury and inflammation.⁴ Levels of 5-LO are elevated in postmortem hippocampus and cortex of patients with Alzheimer's disease.⁵ Cayman's 5-Lipoxygenase Polyclonal Antibody can be used for Western blot and immunohistochemistry applications. The antibody recognizes 5-LO at 78 kDa from human and porcine samples.

References

1. Rådmark, O., Werz, O., Steinhilber, D., *et al.* 5-Lipoxygenase, a key enzyme for leukotriene biosynthesis in health and disease. *Biochim. Biophys. Acta* **1851**(4), 331-339 (2015).
2. Martínez-Clemente, M., Clària, J., and Titos, E. The 5-lipoxygenase/leukotriene pathway in obesity, insulin resistance, and fatty liver disease. *Curr. Opin. Clin. Nutr. Metab. Care* **14**(4), 347-353 (2011).
3. Rådmark, O. Arachidonate 5-lipoxygenase. *Prostaglandins Other Lipid Mediat.* **68-69**, 211-234 (2002).
4. Martínez-Clemente, M., Ferré, N., González-Pérez, A., *et al.* 5-lipoxygenase deficiency reduces hepatic inflammation and tumor necrosis factor α -induced hepatocyte damage in hyperlipidemia-prone ApoE-null mice. *Hepatology* **51**(3), 817-827 (2010).
5. Firuzi, O., Zhuo, J., Chinnici, C.M., *et al.* 5-Lipoxygenase gene disruption reduces amyloid-beta pathology in a mouse model of Alzheimer's disease. *FASEB J.* **22**(4), 1169-1178 (2008).

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