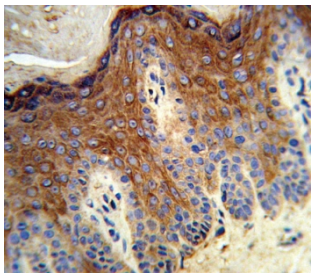
# ALOX12 Antibody / Lipid Peroxidation Enzyme Antibody (F54466)

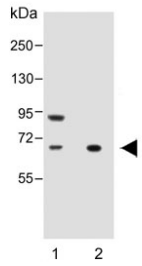
| Catalog No. | Formulation | Size |
|---|---|---|
| F54466-0.4ML | In 1X PBS, pH 7.4, with 0.09% sodium azide | 0.4 ml |
| F54466-0.08ML | In 1X PBS, pH 7.4, with 0.09% sodium azide | 0.08 ml |

**Bulk quote request**

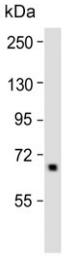
| | |
|---|---|
| **Availability** | 1-3 business days |
| **Species Reactivity** | Human, Mouse, Rat |
| **Format** | Purified |
| **Host** | Rabbit |
| **Clonality** | Polyclonal (rabbit origin) |
| **Isotype** | Rabbit Ig |
| **Purity** | Antigen affinity purified |
| **UniProt** | P18054 |
| **Localization** | Cytoplasmic |
| **Applications** | Western blot: 1:500-1:2000<br>Immunofluorescence: 1:25<br>Flow cytometry: 1:25 (1x10e6 cells)<br>Immunohistochemistry (FFPE): 1:25 |
| **Limitations** | This ALOX12 Antibody / Lipid Peroxidation Enzyme Antibody is available for research use only. |



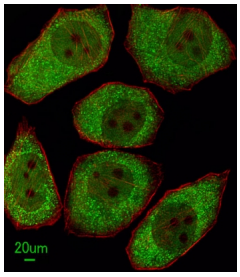
ALOX12 Antibody Human Skin IHC. Immunohistochemical staining of FFPE human skin tissue with ALOX12 antibody. Heat-induced epitope retrieval (HIER) was performed by steaming tissue sections in pH 6 citrate buffer for 20 minutes prior to staining. Strong cytoplasmic immunoreactivity is observed throughout the epidermis, consistent with the expected expression of 12S-Lipoxygenase (ALOX12), a lipid peroxidation enzyme that catalyzes arachidonic acid metabolism and contributes to epidermal differentiation, skin barrier homeostasis, inflammatory signaling, and oxidative stress responses. Cell nuclei are counterstained with hematoxylin (blue).



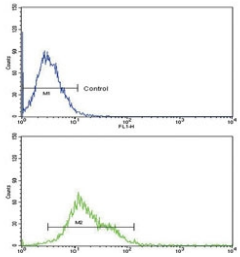

ALOX12 Antibody Human HeLa and Rat Spleen WB. Western blot testing of 1) human HeLa and 2) rat spleen lysates with ALOX12 antibody. A distinct immunoreactive band is detected at approximately 76 kDa, consistent with the predicted molecular weight of 12S-Lipoxygenase (ALOX12). The results demonstrate cross-species detection of this lipid peroxidation enzyme, which catalyzes arachidonic acid metabolism to generate bioactive lipid mediators involved in platelet function, inflammatory signaling, oxidative stress, and cellular homeostasis.




ALOX12 Antibody Mouse Lung WB. Western blot testing of mouse lung tissue lysate with ALOX12 antibody. A distinct immunoreactive band is detected at approximately 76 kDa, consistent with the predicted molecular weight of 12S-Lipoxygenase (ALOX12). The results demonstrate specific detection of this lipid peroxidation enzyme, which catalyzes arachidonic acid metabolism to generate bioactive lipid mediators involved in inflammatory signaling, oxidative stress, lipid metabolism, and regulation of cellular responses.




ALOX12 Antibody A549 Cell IF. Immunofluorescent staining of human A549 cells with ALOX12 antibody (green) and anti-Actin antibody (red). ALOX12 immunoreactivity is observed predominantly within the cytoplasm in a punctate distribution, consistent with the expected localization of 12S-Lipoxygenase (ALOX12), a lipid peroxidation enzyme that catalyzes arachidonic acid metabolism and generates bioactive lipid mediators involved in inflammatory signaling, oxidative stress, ferroptosis, and regulation of cellular homeostasis. Actin (red) highlights the cytoskeletal network and cellular morphology.




ALOX12 Antibody K562 Cell FACS. Flow cytometric analysis of human K562 cells stained with ALOX12 antibody. Blue: isotype control. Green: ALOX12 antibody. The rightward shift of the antibody-stained population relative to the isotype control demonstrates specific detection of 12S-Lipoxygenase (ALOX12), a lipid peroxidation enzyme that catalyzes arachidonic acid metabolism and generates bioactive lipid mediators involved in inflammatory signaling, oxidative stress, ferroptosis, and regulation of cellular responses.

## Description

ALOX12 Antibody recognizes Arachidonate 12-Lipoxygenase (ALOX12), a non-heme iron-containing dioxygenase that catalyzes the oxygenation of polyunsaturated fatty acids, particularly arachidonic acid, to generate bioactive lipid mediators including 12S-hydroxyeicosatetraenoic acid (12S-HETE). As a key lipid peroxidation enzyme, ALOX12 regulates numerous physiological processes including platelet activation, inflammatory signaling, oxidative stress responses, and vascular homeostasis. Through its role in lipid oxidation, ALOX12 influences both normal cellular function and disease progression, making ALOX12 Antibody an important research tool for investigations into lipid metabolism, inflammation, and redox biology.

ALOX12 is expressed in platelets, megakaryocytes, epithelial tissues, neurons, endothelial cells, and selected immune cell populations. Its enzymatic products regulate platelet aggregation, cell proliferation, migration, differentiation, apoptosis, and intercellular communication through bioactive lipid signaling. More recently, ALOX12 has attracted significant attention for its contribution to ferroptosis, an iron-dependent form of regulated cell death driven by lipid peroxidation. Because of these diverse biological functions, ALOX12 Antibody is widely used in studies of oxidative stress, ferroptosis, cardiovascular biology, inflammation, and cancer research.

Dysregulated ALOX12 expression or activity has been implicated in numerous human diseases, including atherosclerosis,

thrombosis, diabetes, asthma, psoriasis, ischemic injury, neurodegenerative disorders, and multiple cancers. Elevated ALOX12 activity has also been associated with tumor progression, angiogenesis, metastatic potential, and resistance to therapy in several malignancies. In parallel, excessive lipid peroxidation mediated by ALOX12 contributes to oxidative tissue damage and inflammatory pathology, while controlled activation of this pathway may promote ferroptotic elimination of cancer cells. Consequently, ALOX12 Antibody has become valuable for investigating disease mechanisms, biomarker discovery, and therapeutic target identification involving lipid metabolism and oxidative signaling.

NSJ Bioreagents offers highly validated ALOX12 Antibody products for reliable detection of endogenous ALOX12 in human and animal samples. These antibodies support research into lipid peroxidation, arachidonic acid metabolism, ferroptosis, platelet biology, inflammatory signaling, oxidative stress, and lipid mediator biology, helping researchers better understand the diverse physiological and pathological roles of this important lipid peroxidation enzyme.

Learn more about enzymes involved in lipid metabolism, arachidonic acid signaling and oxidative stress on our Metabolism Antibodies page.

## Application Notes

The stated application concentrations are suggested starting points. Titration of the ALOX12 Antibody / Lipid Peroxidation Enzyme Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

## Immunogen

A portion of amino acids 618-650 from the human protein was used as the immunogen for the ALOX12 antibody.

## Storage

Aliquot the ALOX12 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

## Alternate Names

12S-Lipoxygenase antibody, Arachidonate 12-Lipoxygenase antibody, Platelet-Type Lipoxygenase antibody, 12-LOX antibody, Arachidonate 12S-Lipoxygenase antibody, Linoleate 12-Lipoxygenase antibody


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