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## Product Information

### Anti-phospho-5-Lipoxygenase [pSer<sup>523</sup>]

produced in rabbit, affinity isolated antibody

Catalog Number **L1168**

#### Product Description

Anti-phospho-5-Lipoxygenase [pSer<sup>523</sup>] is developed in rabbit using a phosphopeptide corresponding to amino acid residues surrounding the phospho-Ser<sup>523</sup> of human 5-lipoxygenase (5-LO) as immunogen. The antibody is affinity purified using sequential chromatography on phospho- and dephosphopeptide affinity columns.

Anti-phospho-5-Lipoxygenase [pSer<sup>523</sup>] specifically recognizes the ~80kDa 5-LO phosphorylated at Ser<sup>523</sup> from human and rat by immunoblotting. Not tested in other species.

The enzyme 5-lipoxygenase plays a key role in regulating the production of leukotrienes (LTs) by catalyzing two reactions in the formation of leukotrienes development of pulmonary hypertension. The 5-LO pathway is linked to hyperlipidemia-dependent inflammation of the arterial wall and to the pathogenesis of aortic aneurysms through a potential chemokine intermediary route. Overproduction of LTs contributes to several diseases, most notably chronic inflammatory diseases, including asthma, fibrosis and arteriosclerosis. Recent work has demonstrated that the activity of 5-LO is regulated by PKA phosphorylation of Ser<sup>523</sup>. Under normal conditions, this phosphorylation may be important in limiting inflammation. Abnormal signaling through cAMP and PKA, then, could contribute to a variety of diseases, including those characterized by chronic inflammation. The phosphospecific antibody to Ser<sup>523</sup> on 5-LO is thus likely to provide a valuable tool for studies of the role of 5-LO regulation in diseases such as asthma, fibrosis and arteriosclerosis.

#### Reagent

Supplied as a solution at 100 µL in 10 mM HEPES, pH 7.5, 150 mM NaCl, 100 µg/mL BSA and 50% glycerol.

#### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material

Safety Data Sheet for information regarding hazards and safe handling practices.

#### Storage/Stability

Store at 2-8 °C. For extended storage, upon initial thawing, freeze in working aliquots. Do not store in frost-free freezers. Avoid repeated freezing and thawing to prevent denaturing the antibody. Working dilution samples should be discarded if not used within 12 hours. The antibody is stable for at least 12 months when stored appropriately.

#### Product Profile

The amount of the reagent supplied is sufficient for 10 blots. A minimum working dilution of 1:1000 is determined by immunoblotting, using rat hippocampal lysates.

**Note:** In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

#### References

1. Dwyer J.H., et al., Arachidonate 5-lipoxygenase promoter genotype, dietary arachidonic acid, and atherosclerosis. *New England J. Med.*, **350**, 29-37 (2004).
2. Funk, C.D., Prostaglandins and leukotrienes: advances in eicosanoid biology. *Science*, **294**, 1871-1875 (2001).
3. Luo M., et al., Protein kinase A inhibits leukotrienes synthesis by phosphorylation of 5-lipoxygenase on Serine 523. *J. Biol. Chem.* **279**, 41512-41520 (2004).
4. Wilborn J. et al., Constitutive activation of 5-lipoxygenase in the lungs of patients with idiopathic pulmonary fibrosis. *J. Clin. Invest.* **97**, 1827-1836 (1996).
5. De Caterina, R. AND Zampolli, A., From asthma to atherosclerosis--5-lipoxygenase, leukotrienes, and inflammation. *New Eng. J. Med.* **350**, 4-7 (2004).

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