



PhosphoSolutions®
Antibodies that work™

Colorado Biosciences Park
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Anti-Phospho-Ser⁵²³ 5-Lipoxygenase

Catalog Number: p175-523

Size: 100 µl

\$310.00

Product Description: Affinity purified rabbit polyclonal antibody

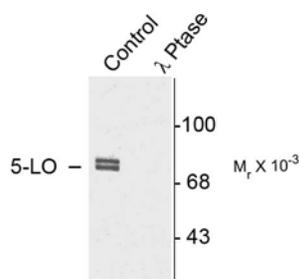
Applications: WB: 1:1000

Antigen: Phosphopeptide corresponding to amino acid residues surrounding the phospho-Ser⁵²³ of human 5-lipoxygenase (5-LO).

Species reactivity: The antibody has been directly tested for reactivity in Western blots with rat and human tissue. It is anticipated that the antibody will react with non human primates based on the fact that these species have 100% homology with the amino acid sequence used as antigen.

Biological Significance: The enzyme 5-lipoxygenase (5-LO) plays a key role in regulating the production of leukotrienes (LTs) (Funk, 2001). Overproduction of LTs contributes to several diseases, most notably chronic inflammatory diseases, including asthma (Drazen et al., 1994), fibrosis (Wilborn et al., 1996) and atherosclerosis (Dwyer et al., 2004). Recent work has demonstrated that the activity of 5-LO is regulated by PKA phosphorylation of serine-523 in 5-LO (Luo et al., 2004). 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 phospho-specific antibody to Ser⁵²³ 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 atherosclerosis.

Anti-Phospho Ser⁵²³ 5-Lipoxygenase



Western blot of rat cortex lysate showing specific immunolabeling of the ~80k doublet of 5-LO phosphorylated at Ser⁵²³ (Control). The phosphospecificity of this labeling is shown in the second lane (*lambda*-phosphatase: λ-Ptase). The blot is identical to the control except that it was incubated in λ-Ptase (1200 units for 30 min) before being exposed to the 5-LO Ser⁵²³ antibody. The immunolabeling is completely eliminated by treatment with λ-Ptase.

WB = Western Blot **IF** = Immunofluorescence **IHC** = Immunohistochemistry **IP** = Immunoprecipitation

Packaging: 100 µl in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 µg per ml BSA and 50% glycerol. Adequate amount of material to conduct 10-mini Western Blots.

Storage and Stability. For long term storage -20°C is recommended. Stable at -20°C for at least 1 year.

Shipment: Domestic - Blue Ice; International - Blue Ice or Dry Ice.

Purification Method: Prepared from rabbit serum by affinity purification via sequential chromatography on phospho- and dephosphopeptide affinity columns.

Antibody Specificity: Specific for the ~80k 5-LO phosphorylated at Ser⁵²³ in Western blots.

Quality Control Tests: Western blots performed on each lot.

References:

- Drazen JM, Lilly CM, Sperling R, Rubin P, Israel E (1994) Role of cysteinyl leukotrienes in spontaneous asthmatic responses. *Adv. Prostaglandin Thromboxane Leukot Res* 22:251-262.
- Dwyer JH, Allayee H, Dwyer KM, Fan J, Wu H, Mar R, Lusis AJ, Mehrabian M (2004) Arachidonate 5-lipoxygenase promoter genotype, dietary arachidonic acid, and atherosclerosis. *New England J Med* 350:29-37.
- Funk, CD (2001) Prostaglandins and leukotrienes: advances in eicosanoid biology. *Science* 294:1871-1875.
- Luo M, Jones SM, Phare SM, Coffey MJ, Peters-Golden M, Brock TG (2004) Protein kinase A inhibits leukotriene synthesis by phosphorylation of 5-lipoxygenase on Serine 523. *J Biol Chem* 279:41,512-41,520.
- Wilborn J, Bailie M, Coffey M, Burdick M, Strieter R, Peters-Golden M. (1996) Constitutive activation of 5-lipoxygenase in the lungs of patients with idiopathic pulmonary fibrosis. *J Clin Invest* 97:1827-1836.

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