

Anti-Phospho-Ser⁵²³ 5-Lipoxygenase Antibody



PhosphoSolutions®

Antibodies that work™

www.phosphosolutions.com

orders@phosphosolutions.com

888-442-7100

Catalog #: p175-523

Size: 100 µl

Cite this Antibody: PhosphoSolutions Cat# p175-523, RRID:AB_2492028

Host	Applications	Species Tested	Species Reactivity*	Molecular Weight
Rabbit	WB 1:1000	H, M, R	NHP	~80 kDa

Product Description: Affinity purified rabbit polyclonal antibody.

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.

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

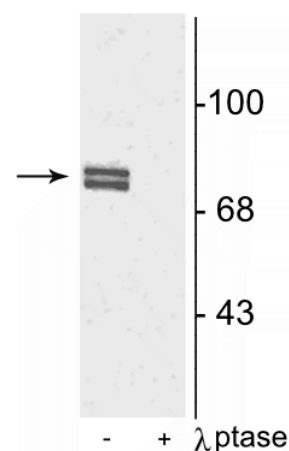
Antibody Specificity: Specific for endogenous levels of the ~80k 5-LO phosphorylated at Ser⁵²³ in Western blots. Immunolabeling is completely eliminated by blot treatment with *lambda* phosphatase (λ-Ptase, 1200 units for 30 min).

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

Quality Control Tests: Western blots performed on each lot.

Packaging: 100 µl in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 µg BSA per ml and 50% glycerol.

Storage and Stability: Shipped on blue ice. Storage at -20°C is recommended, as aliquots may be taken without freeze/thawing due to presence of 50% glycerol. Stable for at least 1 year at -20°C.



Western blot of rat cortical lysate showing specific immunolabeling of the ~80 kDa doublet of 5-LO phosphorylated at Ser⁵²³ in the first lane (-). Phosphospecificity is shown in the second lane (+) where immunolabeling is completely eliminated by blot treatment with *lambda* phosphatase (λ-Ptase, 1200 units for 30 min).

Product Specific References:

Luo, M., Jones, S.M., Phare, S.M., Coffey, M.J., Peters-Golden, M. and Brock, T.G., 2004. Protein kinase A inhibits leukotriene synthesis by phosphorylation of 5-lipoxygenase on serine 523. *Journal of Biological Chemistry*, 279(40), pp.41512-41520.

General 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, Lusa 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.