

# 5-Lipoxygenase (C49G1) Rabbit mAb

✓ 100 µl  
(10 western blots)

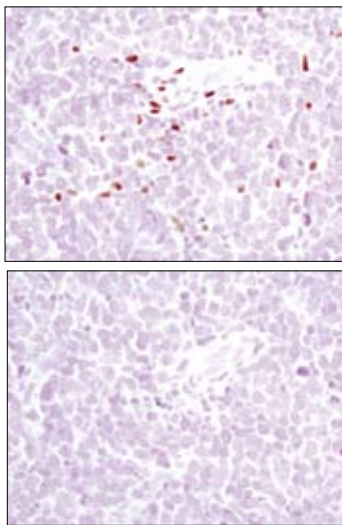
**Orders** ■ 877-616-CELL (2355)  
orders@cellsignal.com  
**Support** ■ 877-678-TECH (8324)  
info@cellsignal.com  
**Web** ■ www.cellsignal.com

rev. 07/09/10

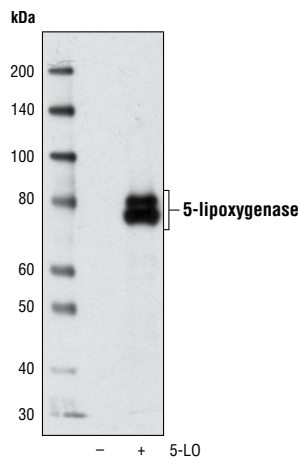
This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W, IP, IHC-P Endogenous	H, (M, R, Mk)	78 kDa	Rabbit IgG**

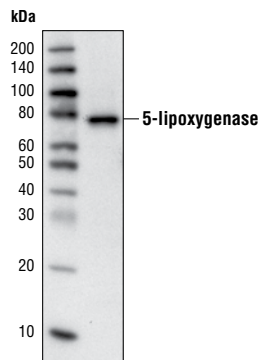
**Background:** 5-Lipoxygenase (5-LO, ALOX5) is an important catalytic enzyme responsible for the biosynthesis of leukotriene LTA<sub>4</sub> from arachidonic acid (1,2). Leukotriene synthesis also requires 5-lipoxygenase-activating protein (FLAP, ALOX5AP), a nuclear membrane-bound protein that binds arachidonic acid and is thought to activate 5-LO. A number of related leukotrienes (i.e. B<sub>4</sub>, C<sub>4</sub>, D<sub>4</sub>) are derived from LTA<sub>4</sub> and together these lipid mediators function in immune reaction regulation. 5-LO is primarily expressed in polymorphonuclear leukocytes, peripheral blood monocytes, macrophages, and mast cells (1,3). Overexpression of 5-LO protein is seen in certain cancer cells and is associated with poor prognosis (1,4). Depending upon the cell type, 5-LO is localized to either the cytosol or the nucleus of quiescent cells (5). Following stimulation, 5-LO translocates to the nucleus and associates with FLAP to catalyze LTA<sub>4</sub> synthesis (2,3). Phosphorylation of specific residues can regulate 5-LO enzymatic activity. Phosphorylation of 5-LO at Ser523 by a PKA family kinase inhibits oxygenase activity (6,7) while MAPKAP2 and ERK family kinases phosphorylation at Ser271 and Ser663 stimulates 5-LO enzymatic activity *in vivo* (8,9).



Immunohistochemical analysis of paraffin-embedded non-Hodgkin's lymphoma, using 5-Lipoxygenase (C49G1) Rabbit mAb in the presence of control peptide (upper) or antigen specific peptide (lower).



Western blot analysis of extracts from COS cells transfected with 5-LO using 5-Lipoxygenase (49G1) Rabbit mAb.



Western blot analysis of extracts from human RL cells using 5-Lipoxygenase (49G1) Rabbit mAb.

**Specificity/Sensitivity:** 5-Lipoxygenase (C49G1) Rabbit mAb detects recombinant as well as endogenous levels of total 5-lipoxygenase protein.

**Source/Purification:** Monoclonal antibody is produced by immunizing animals with a synthetic peptide derived from residues surrounding Ile168 of human 5-lipoxygenase protein.

Entrez-Gene ID #240  
Swiss-Prot Acc. #P09917

**Storage:** Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

\*Species cross-reactivity is determined by western blot.

\*\*Anti-rabbit secondary antibodies must be used to detect this antibody.

#### Recommended Antibody Dilutions:

Western blotting 1:1000  
Immunoprecipitation 1:50  
Immunohistochemistry (Paraffin) 1:50†

Unmasking buffer: Citrate  
Antibody diluent: SignalStain® Antibody Diluent #8112

Detection reagent: SignalStain® Boost (HRP, Rabbit) #8114

†Optimal IHC dilutions determined using SignalStain® Boost IHC Detection Reagent.

For application specific protocols please see the web page for this product at [www.cellsignal.com](http://www.cellsignal.com).

Please visit [www.cellsignal.com](http://www.cellsignal.com) for a complete listing of recommended companion products.

#### Background References:

- (1) Woods, J.W. et al. (1995) *J Clin Invest* 95, 2035–46.
- (2) Evans, J.F. et al. (2008) *Trends Pharmacol Sci* 29, 72–8.
- (3) Rådmark, O. et al. (2007) *Trends Biochem Sci* 32, 332–41.
- (4) Chen, X. et al. (2006) *Curr Cancer Drug Targets* 6, 613–22.
- (5) Werz, O. (2002) *Curr Drug Targets Inflamm Allergy* 1, 23–44.
- (6) Luo, M. et al. (2004) *J Biol Chem* 279, 41512–20.
- (7) Luo, M. et al. (2005) *J Biol Chem* 280, 40609–16.
- (8) Werz, O. et al. (2002) *FASEB J* 16, 1441–3.
- (9) Werz, O. et al. (2002) *J Biol Chem* 277, 14793–800.

**IMPORTANT:** For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.