



Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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#3482

Phospho-LKB1 (Ser428) (C67A3) Rabbit mAb

For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H M R Mk	Endogenous	54	Rabbit	#Q15831	6794

Product Usage Information

Application

Western Blotting

Dilution

1:1000

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.

Specificity/Sensitivity

Phospho-LKB1 (Ser428) (C67A3) Rabbit mAb detects endogenous levels of LKB1 when phosphorylated at Ser428.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser428 of human LKB1 (Ser431 of mouse).

Background

LKB1 (STK11) is a serine/threonine kinase and tumor suppressor that helps control cell structure, apoptosis and energy homeostasis through regulation of numerous downstream kinases (1,2). A cytosolic protein complex comprised of LKB1, putative kinase STRAD, and the MO25 scaffold protein, activates both AMP-activated protein kinase (AMPK) and several AMPK-related kinases (3). AMPK plays a predominant role as the master regulator of cellular energy homeostasis, controlling downstream effectors that regulate cell growth and apoptosis in response to cellular ATP concentrations (4). LKB1 appears to be phosphorylated in cells at several sites, including human LKB1 at Ser31/325/428 and Thr189/336/363 (5).

Mutation in the corresponding LKB1 gene causes Peutz-Jeghers syndrome (PJS), an autosomal dominant disorder characterized by benign GI tract polyps and dark skin lesions of the mouth, hands, and feet (6). A variety of other LKB1 gene mutations have been associated with the formation of sporadic cancers in several tissues (7).

Recent evidence suggests that phosphorylation at Ser428 by PKCζ influences the ability of LKB1 to bind and phosphorylate AMPK at Thr172 (8) as well as regulate apoptosis through PTEN signaling pathway suppression of Akt (9).

Background References

1. Baas, A.F. et al. (2004) *Trends Cell Biol* 14, 312-9.
2. Marignani, P.A. (2005) *J Clin Pathol* 58, 15-9.
3. Lizcano, J.M. et al. (2004) *EMBO J* 23, 833-43.
4. Hardie, D.G. (2004) *J Cell Sci* 117, 5479-87.
5. Sapkota, G.P. et al. (2002) *Biochem J* 362, 481-90.
6. Jenne, D.E. et al. (1998) *Nat Genet* 18, 38-43.
7. Sanchez-Cespedes, M. (2007) *Oncogene* 26, 7825-32.
8. Xie, Z. et al. (2006) *J Biol Chem* 281, 6366-75.
9. Song, P. et al. (2008) *J Biol Chem* 283, 12446-55.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

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

Applications Key

W: Western Blotting

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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