

# LKB1 (Ley 37D/G6): sc-32245

## BACKGROUND

Peutz-Jeghers syndrome (PJS) is a rare hereditary disease characterized by melanocytic macules lips, gastrointestinal hamartomatous polyps and an increased risk for many classes of cancer. LKB1 (also designated STK11 and PJS) has been identified as the gene mutated in PJS. LKB1 is a 433 amino acid serine/threonine kinase with strong homology to the *Xenopus* cytoplasmic protein kinase XEEK1 and weaker similarity to many other protein kinases. LKB1 is ubiquitously expressed and many frameshift, deletion and splicing mutations have been identified in PJS patients. Despite the increased risk of cancer for PJS patients, LKB1 does not appear to play a major role in colorectal, testicular or breast cancers.

## CHROMOSOMAL LOCATION

Genetic locus: STK11 (human) mapping to 19p13.3; Stk11 (mouse) mapping to 10 C1.

## SOURCE

LKB1 (Ley 37D/G6) is a mouse monoclonal antibody raised against recombinant LKB1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

LKB1 (Ley 37D/G6) is available conjugated to agarose (sc-32245 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-32245 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-32245 PE), fluorescein (sc-32245 FITC), Alexa Fluor<sup>®</sup> 488 (sc-32245 AF488), Alexa Fluor<sup>®</sup> 546 (sc-32245 AF546), Alexa Fluor<sup>®</sup> 594 (sc-32245 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-32245 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-32245 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-32245 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

LKB1 (Ley 37D/G6) is recommended for detection of LKB1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for LKB1 siRNA (h): sc-35816, LKB1 siRNA (m): sc-35817, LKB1 siRNA (r): sc-270074, LKB1 shRNA Plasmid (h): sc-35816-SH, LKB1 shRNA Plasmid (m): sc-35817-SH, LKB1 shRNA Plasmid (r): sc-270074-SH, LKB1 shRNA (h) Lentiviral Particles: sc-35816-V, LKB1 shRNA (m) Lentiviral Particles: sc-35817-V and LKB1 shRNA (r) Lentiviral Particles: sc-270074-V.

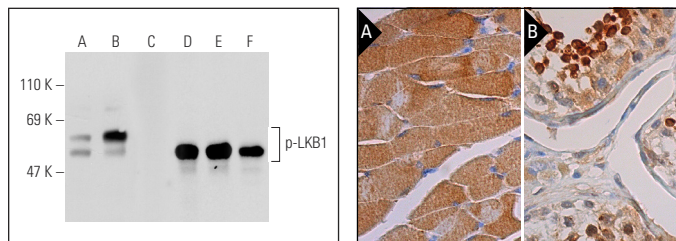
Molecular Weight of LKB1: 52 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, 3611-RF whole cell lysate: sc-2215 or MCF7 whole cell lysate: sc-2206.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## DATA



Western blot analysis of LKB1 phosphorylation in untreated (A, D), PMA treated (B, E) and PMA and lambda protein phosphatase (sc-200312A) treated (C, F) Jurkat whole cell lysates. Antibodies tested include p-LKB1 (C-1): sc-271924 (A, B, C) and LKB1 (Ley 37D/G6): sc-32245 (D, E, F).

LKB1 (Ley 37D/G6): sc-32245. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of myocytes (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing nuclear or cytoplasmic staining of cells in seminiferous ducts (B).

## SELECT PRODUCT CITATIONS

- Imai, K., et al. 2006. LKB1, an upstream AMPK kinase, regulates glucose and lipid metabolism in cultured liver and muscle cells. *Biochem. Biophys. Res. Commun.* 351: 595-601.
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- Zhang, C.S., et al. 2017. Fructose-1,6-bisphosphate and aldolase mediate glucose sensing by AMPK. *Nature* 548: 112-116.
- Madsen, A.B., et al. 2018.  $\beta$ -Actin shows limited mobility and is required only for supraphysiological insulin-stimulated glucose transport in young adult soleus muscle. *Am. J. Physiol. Endocrinol. Metab.* 315: E110-E125.
- Wang, G., et al. 2018. Expression profiling of ubiquitin-related genes in LKB1 mutant lung adenocarcinoma. *Sci. Rep.* 8: 13221.
- Ding, C., et al. 2018.  $Ca^{2+}$ -CaMKK $\beta$  pathway is required for adiponectin-induced secretion in rat submandibular gland. *J. Mol. Histol.* 49: 99-110.
- Zulato, E., et al. 2018. LKB1 loss is associated with glutathione deficiency under oxidative stress and sensitivity of cancer cells to cytotoxic drugs and  $\gamma$ -irradiation. *Biochem. Pharmacol.* 156: 479-490.
- Li, W., et al. 2018. CAB39L elicited an anti-Warburg effect via a LKB1-AMPK-PGC1 $\alpha$  axis to inhibit gastric tumorigenesis. *Oncogene* 37: 6383-6398.
- Masand, R., et al. 2018. Proteome imbalance of mitochondrial electron transport chain in brown adipocytes leads to metabolic benefits. *Cell Metab.* 27: 616-629.e4.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.