

# ITPK1 (E-15): sc-164711

## BACKGROUND

Intracellular calcium concentrations are regulated by a family of inositol phosphates, which act as second messengers in the calcium cell signaling pathway. ITPK1 (inositol 1,3,4-triphosphate 5/6 kinase), also known as ITRPK1, is a 414 amino acid monomer that belongs to the ITPK1 family and exists as 2 alternatively spliced isoforms. Widely expressed, ITPK1 is found at highest levels in brain, followed by heart, skeletal muscle, kidney, pancreas, liver, placenta and lung. ITPK1 contains one ATP-grasp domain and has been found to phosphorylate various inositol polyphosphates and modify TNF- $\alpha$ -induced apoptosis. The gene encoding ITPK1 maps to human chromosome 14, which houses over 700 genes and comprises nearly 3.5% of the human genome.

## REFERENCES

1. Wilson, M.P. and Majerus, P.W. 1996. Isolation of inositol 1,3,4-trisphosphate 5/6-kinase, cDNA cloning and expression of the recombinant enzyme. *J. Biol. Chem.* 271: 11904-11910.
2. Yang, X. and Shears, S.B. 2000. Multitasking in signal transduction by a promiscuous human Ins(3,4,5,6)P(4) 1-kinase/Ins(1,3,4)P(3) 5/6-kinase. *Biochem. J.* 351: 551-555.
3. Wilson, M.P., Sun, Y., Cao, L. and Majerus, P.W. 2001. Inositol 1,3,4-trisphosphate 5/6-kinase is a protein kinase that phosphorylates the transcription factors c-Jun and ATF-2. *J. Biol. Chem.* 276: 40998-41004.
4. Ho, M.W., Yang, X., Carew, M.A., Zhang, T., Hua, L., Kwon, Y.U., Chung, S.K., Adelt, S., Vogel, G., Riley, A.M., Potter, B.V. and Shears, S.B. 2002. Regulation of Ins(3,4,5,6)P(4) signaling by a reversible kinase/phosphatase. *Curr. Biol.* 12: 477-482.
5. Sun, Y., Wilson, M.P. and Majerus, P.W. 2002. Inositol 1,3,4-trisphosphate 5/6-kinase associates with the COP9 signalosome by binding to CSN1. *J. Biol. Chem.* 277: 45759-45764.
6. Chamberlain, P.P., Qian, X., Stiles, A.R., Cho, J., Jones, D.H., Lesley, S.A., Grabau, E.A., Shears, S.B. and Spraggon, G. 2007. Integration of inositol phosphate signaling pathways via human ITPK1. *J. Biol. Chem.* 282: 28117-28125.

## CHROMOSOMAL LOCATION

Genetic locus: ITPK1 (human) mapping to 14q32.12; Itpk1 (mouse) mapping to 12 E.

## SOURCE

ITPK1 (E-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ITPK1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-164711 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

ITPK1 (E-15) is recommended for detection of ITPK1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

ITPK1 (E-15) is also recommended for detection of ITPK1 in additional species, including canine and porcine.

Suitable for use as control antibody for ITPK1 siRNA (h): sc-92365, ITPK1 siRNA (m): sc-146313, ITPK1 shRNA Plasmid (h): sc-92365-SH, ITPK1 shRNA Plasmid (m): sc-146313-SH, ITPK1 shRNA (h) Lentiviral Particles: sc-92365-V and ITPK1 shRNA (m) Lentiviral Particles: sc-146313-V.

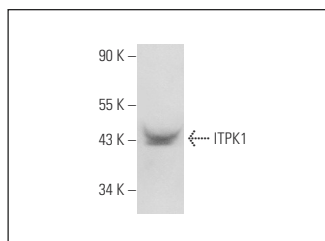
Molecular Weight of ITPK1 isoforms: 46/36 kDa.

Positive Controls: MOLT-4 cell lysate: sc-2233.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



ITPK1 (E-15): sc-164711. Western blot analysis of ITPK1 expression in MOLT-4 whole cell lysate.

## STORAGE

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

## RESEARCH USE

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