

IP3KA (F-3): sc-271838



The Power to Question

BACKGROUND

Inositol 1,4,5-trisphosphate (Ins(1,4,5)P₃) regulates the level of calcium within the cell by releasing calcium from intracellular stores. Ins(1,4,5)P₃ is phosphorylated by inositol 1,4,5-trisphosphate 3-kinase (IP3K) to form inositol 1,3,4,5-tetrakisphosphate (Ins(1,4,5)P₄), which is thought to regulate the influx of calcium across the plasma membrane. IP3K exists as three isoforms, IP3KA, B, and C. IP3KA, the most highly characterized isoform, is expressed in rat brain and testis. IP3KB is expressed in various rat tissues such as lung, thymus, testis, brain and heart. IP3K activity is stimulated in the presence of calmodulin via phosphorylation by cAMP-dependent protein kinase, protein kinase C, or calcium/calmodulin dependent protein kinase II and, subsequently, mediates the inositol phosphate signaling pathways.

REFERENCES

1. Johanson, R.A., et al. 1988. Purification of D-myo-inositol 1,4,5-trisphosphate 3-kinase from rat brain. *J. Biol. Chem.* 263: 7465-7471.
2. Berridge, M.J. and Irvine, R.F. 1989. Inositol phosphates and cell signaling. *Nature* 341: 197-205.
3. Sim, S.S., et al. 1990. Regulation of D-myo-inositol 1,4,5-trisphosphate 3-kinase by cAMP-dependent protein kinase and protein kinase C. *J. Biol. Chem.* 265: 10367-10372.
4. Takazawa, K., et al. 1990. Cloning and expression in *Escherichia coli* of a rat brain cDNA encoding a Ca²⁺/calmodulin-sensitive inositol 1,4,5-trisphosphate 3-kinase. *Biochem. J.* 272: 107-112.
5. Irvine, R.F. 1991. Inositol tetrakisphosphate as a second messenger: confusions, contradictions, and a potential resolution. *Bioessays* 13: 419-427.

CHROMOSOMAL LOCATION

Genetic locus: ITPKA (human) mapping to 15q15.1; Itpka (mouse) mapping to 2 E5.

SOURCE

IP3KA (F-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-25 at the N-terminus of IP3KA of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

IP3KA (F-3) is available conjugated to agarose (sc-271838 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271838 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271838 PE), fluorescein (sc-271838 FITC), Alexa Fluor® 488 (sc-271838 AF488), Alexa Fluor® 546 (sc-271838 AF546), Alexa Fluor® 594 (sc-271838 AF594) or Alexa Fluor® 647 (sc-271838 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271838 AF680) or Alexa Fluor® 790 (sc-271838 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-271838 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

IP3KA (F-3) is recommended for detection of IP3KA 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for IP3KA siRNA (h): sc-39064, IP3KA siRNA (m): sc-39065, IP3KA shRNA Plasmid (h): sc-39064-SH, IP3KA shRNA Plasmid (m): sc-39065-SH, IP3KA shRNA (h) Lentiviral Particles: sc-39064-V and IP3KA shRNA (m) Lentiviral Particles: sc-39065-V.

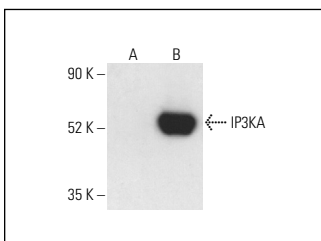
Molecular Weight of IP3KA: 50 kDa.

Positive Controls: rat cerebellum extract: sc-2398, mouse brain extract: sc-2253 or IP3KA (m): 293T Lysate: sc-127014.

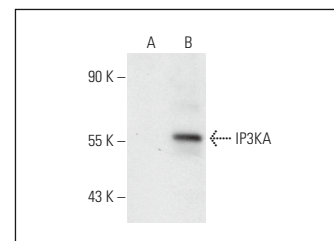
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



IP3KA (F-3) HRP: sc-271838 HRP. Direct western blot analysis of IP3KA expression in non-transfected: sc-117752 (A) and mouse IP3KA transfected: sc-127014 (B) 293T whole cell lysates.



IP3KA (F-3): sc-271838. Western blot analysis of IP3KA expression in non-transfected: sc-117752 (A) and mouse IP3KA transfected: sc-127014 (B) 293T whole cell lysates.

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.

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