

IP6K2 (4F10): sc-130012

BACKGROUND

The members of the inositol hexakisphosphate kinase family, IP6K1 and IP6K2, have a high affinity and selectivity for inositol hexakisphosphate (InsP6) as a substrate. IP6K1 and IP6K2 (also designated PiUS) convert InsP6 to PP-InsP5; however, neither kinase demonstrates any catalytic activity with other inositol pyrophosphates. The presence of InsP6, which inhibits serine/threonine protein phosphatases, increases the influx of calcium across the plasma membrane and implies that it may mediate the regulation of Insulin exocytosis. IP6K1 was purified in rat brain extracts; by homology, IP6K1 and IP6K2 were characterized in mouse. IP6K1 displays ATP synthase activity by transferring a phosphate from PP-InsP5 to ADP, which suggests a role for the IP6 kinases as high energy phosphate donors.

REFERENCES

1. Voglmaier, S.M., et al. 1996. Purified inositol hexakisphosphate kinase is an ATP synthase: diphosphoinositol pentakisphosphate as a high-energy phosphate donor. *Proc. Natl. Acad. Sci. USA* 93: 4305-4310.
2. Huang, C.F., et al. 1998. Identification and purification of diphosphoinositol pentakisphosphate kinase, which synthesizes the inositol pyrophosphate bis(diphospho) inositol tetrakisphosphate. *Biochemistry* 37: 14998-15004.
3. Saiardi, A., et al. 1999. Synthesis of diphosphoinositol pentakisphosphate by a newly identified family of higher inositol polyphosphate kinases. *Curr. Biol.* 9: 1323-1326.
4. Schell, M.J., et al. 1999. PiUS (Pi uptake stimulator) is an inositol hexakisphosphate kinase. *FEBS Lett.* 461: 169-172.
5. Barker, C.J. and Berggren, P.O. 1999. Inositol hexakisphosphate and β -cell stimulus-secretion coupling. *Anticancer Res.* 19: 3737-3741.

CHROMOSOMAL LOCATION

Genetic locus: IP6K2 (human) mapping to 3p21.31; Ip6k2 (mouse) mapping to 9 F2.

SOURCE

IP6K2 (4F10) is a mouse monoclonal antibody raised against full-length recombinant IP6K2 of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

IP6K2 (4F10) is available conjugated to agarose (sc-130012 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to either phycoerythrin (sc-130012 PE), fluorescein (sc-130012 FITC), Alexa Fluor[®] 488 (sc-130012 AF488), Alexa Fluor[®] 546 (sc-130012 AF546), Alexa Fluor[®] 594 (sc-130012 AF594) or Alexa Fluor[®] 647 (sc-130012 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-130012 AF680) or Alexa Fluor[®] 790 (sc-130012 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

IP6K2 (4F10) is recommended for detection of IP6K2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for IP6K2 siRNA (h): sc-39071, IP6K2 siRNA (m): sc-39072, IP6K2 shRNA Plasmid (h): sc-39071-SH, IP6K2 shRNA Plasmid (m): sc-39072-SH, IP6K2 shRNA (h) Lentiviral Particles: sc-39071-V and IP6K2 shRNA (m) Lentiviral Particles: sc-39072-V.

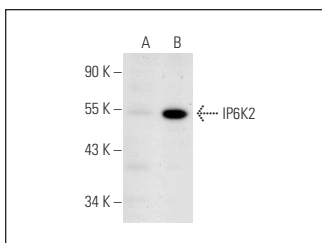
Molecular Weight of IP6K2 isoforms: 49/11/8 kDa.

Positive Controls: IP6K2 (h): 293T Lysate: sc-113933, mouse brain extract: sc-2253 or IP6K2 (m): 293T Lysate: sc-121094.

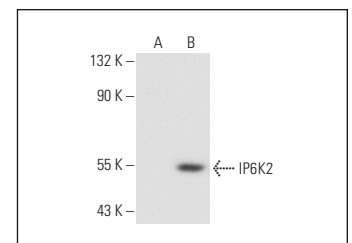
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



IP6K2 (4F10): sc-130012. Western blot analysis of IP6K2 expression in non-transfected: sc-117752 (A) and mouse IP6K2 transfected: sc-121094 (B) 293T whole cell lysates.



IP6K2 (4F10): sc-130012. Western blot analysis of IP6K2 expression in non-transfected: sc-117752 (A) and human IP6K2 transfected: sc-113933 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Ito, M., et al. 2023. Inositol pyrophosphate profiling reveals regulatory roles of IP6K2-dependent enhanced IP₇ metabolism in the enteric nervous system. *J. Biol. Chem.* E-published.

STORAGE

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

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