SANTA CRUZ BIOTECHNOLOGY, INC.

KIF1B (E-12): sc-376246

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The kinesins constitute a large family of microtubule-dependent motor proteins, which are responsible for the distribution of numerous organelles, vesicles and macromolecular complexes throughout the cell. Individual kinesin members play crucial roles in cell division, intracellular transport and membrane trafficking events including endocytosis and transcytosis. KIF1B is a member of the KIF1/Unc104 family of kinesin-like proteins that are involved in the transport of mitochondria or synaptic vesicles in axons. KIF1B is an amino-terminal-type motor protein that is ubiquitously expressed, with the most abundant levels in differentiated nerve cells. The human KIF1B gene maps to chromosome 1p36.22. Defects in axonal transport due to mutations at the KIF1B gene can underlie the human peripheral neuropathy phenotype. The mouse KIF1B gene generates an alternatively spliced transcript, which produces two isoforms.

REFERENCES

1. Nangaku, M., et al. 1994. KIF1B, a novel microtubule plus end-directed monomeric motor protein for transport of mitochondria. Cell 79: 1209-1220.
2. Hamm-Alvarez, S.F. 1998. Molecular motors and their role in membrane traffic. Adv. Drug Deliv. Rev. 29: 229-242.
3. Gong, T.W., et al. 1999. A novel mouse kinesin of the UNC-104/KIF1 subfamily encoded by the KIF1B gene. Gene 239: 117-127.
4. Cole, D.G. 1999. Kinesin-II, the heteromeric kinesin. Cell. Mol. Life Sci. 56: 217-226.
5. Yang, Z., et al. 2001 Molecular cloning and functional analysis of mouse C-terminal kinesin motor KifC3. Mol. Cell. Biol. 21: 765-770.

CHROMOSOMAL LOCATION

Genetic locus: KIF1B (human) mapping to 1p36.22; Kif1b (mouse) mapping to 4 E2.

SOURCE

KIF1B (E-12) is a mouse monoclonal antibody raised against amino acids 964-1153 mapping at the C-terminus of KIF1B of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

KIF1B (E-12) is available conjugated to agarose (sc-376246 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376246 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376246 PE), fluorescein (sc-376246 FITC), Alexa Fluor® 488 (sc-376246 AF488), Alexa Fluor® 546 (sc-376246 AF546), Alexa Fluor® 594 (sc-376246 AF594) or Alexa Fluor® 647 (sc-376246 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376246 AF680) or Alexa Fluor® 790 (sc-376246 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

KIF1B (E-12) is recommended for detection of KIF1B 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), immunohistochemistry (including paraffin-embedded sections) (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 KIF1B siRNA (h): sc-35749, KIF1B siRNA (m): sc-35750, KIF1B shRNA Plasmid (h): sc-35749-SH, KIF1B shRNA Plasmid (m): sc-35750-SH, KIF1B shRNA (h) Lentiviral Particles: sc-35749-V and KIF1B shRNA (m) Lentiviral Particles: sc-35750-V.

Molecular Weight of KIF1B isoform 1: 204 kDa.

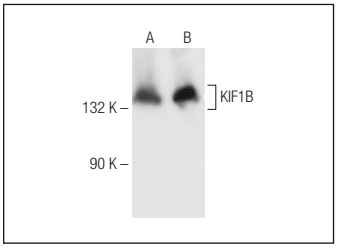
Molecular Weight of KIF1B isoform 2 (α): 199 kDa.

Molecular Weight of KIF1B isoform 3 (β): 130 kDa.

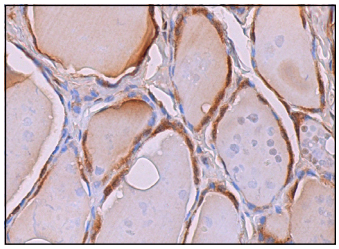
Molecular Weight of KIF1B isoform 4: 205 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, PC-12 cell lysate: sc-2250 or IMR-32 cell lysate: sc-2409.

DATA



KIF1B (E-12): sc-376246. Western blot analysis of KIF1B expression in IMR-32 (**A**) and PC-12 (**B**) whole cell lysate.



Rab 4/14 (F-10): sc-376246. Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Atkins, M., et al. 2019. FIGNL1 associates with KIF1Bβ and BICD1 to restrict Dynein transport velocity during axon navigation. J. Cell Biol. 218: 3290-3306.
2. Düthorn, A., et al. 2019. siRNA electroporation to modulate autophagy in herpes simplex virus type 1-infected monocyte-derived dendritic cells. J. Vis. Exp. E-published.
3. Hildebrandt, R.P., et al. 2023. Muscleblind-like proteins use modular domains to localize RNAs by riding kinesins and docking to membranes. Nat. Commun. 14: 3427.

STORAGE

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