SANTA CRUZ BIOTECHNOLOGY, INC.

KIF4 (E-8): sc-365144

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. KIF4A (kinesin family member 4A), also designated KIF4G1, is a 1,232 amino acid nuclear and cytoplasmic protein that belongs to the chromokinesin subfamily of the kinesin-like protein family. KIF4A is highly expressed in hematopoetic tissues, spleen, thymus, bone marrow and fetal liver. KIF4B (kinesin family member 4B) is a 1,234 amino acid nuclear matrix protein that is exclusively expressed in testis. KIF4A and KIF4B are motor proteins that translocate PRC1 to interlocking spindle microtubules during the metaphase to anaphase transition of cytokinesis. KIF4A and KIF4B may participate in mitotic chromosomal positioning and bipolar spindle stabilization.

CHROMOSOMAL LOCATION

Genetic locus: KIF4A (human) mapping to Xq13.1, KIF4B (human) mapping to 5q33.2; Kif4 (mouse) mapping to X C3, Kif4-ps (mouse) mapping to 12 E.

SOURCE

KIF4 (E-8) is a mouse monoclonal antibody raised against amino acids 361-660 mapping within an internal region of KIF4A 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.

KIF4 (E-8) is available conjugated to agarose (sc-365144 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365144 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365144 PE), fluorescein (sc-365144 FITC), Alexa Fluor® 488 (sc-365144 AF488), Alexa Fluor® 546 (sc-365144 AF546), Alexa Fluor® 594 (sc-365144 AF594) or Alexa Fluor® 647 (sc-365144 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365144 AF680) or Alexa Fluor® 790 (sc-365144 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

KIF4 (E-8) is recommended for detection of KIF4A and KIF4B of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

Molecular Weight of KIF4: 140 kDa.

Positive Controls: NTERA-2 cl.D1 whole cell lysate: sc-364181, HeLa whole cell lysate: sc-2200 or IMR-32 cell lysate: sc-2409.

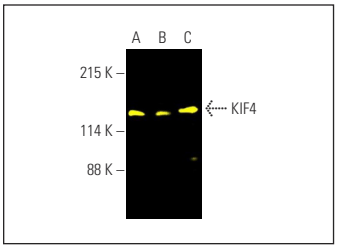
STORAGE

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

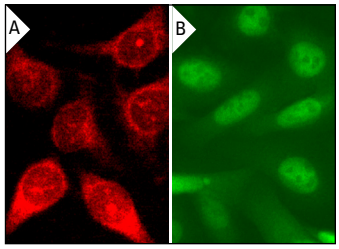
RESEARCH USE

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

DATA



KIF4 (E-8) Alexa Fluor® 488: sc-365144 AF488. Direct fluorescent western blot analysis of KIF4 expression in HeLa (**A**), IMR-32 (**B**) and NTERA-2 cl.D1 (**C**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.



KIF4 (E-8): sc-365144. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). KIF4 (E-8) Alexa Fluor® 488: sc-365144 AF488. Direct immunofluorescence staining of formalin-fixed SW480 cells showing nuclear and cytoplasmic localization. Blocked with UltraCruz® Blocking Reagent: sc-516214 (**B**).

SELECT PRODUCT CITATIONS

1. Abadía-Molina, F., et al. 2017. Neuronal apoptosis inhibitory protein (NAIP) localizes to the cytokinetic machinery during cell division. Sci. Rep. 7: 39981.
2. Perchey, R.T., et al. 2018. $p27^{Kip1}$ regulates the microtubule bundling activity of PRC1. Biochim. Biophys. Acta Mol. Cell Res. 1865: 1630-1639.
3. Chinen, T., et al. 2020. NuMA assemblies organize microtubule asters to establish spindle bipolarity in acentrosomal human cells. EMBO J. 39: e102378.
4. Jagric, M., et al. 2021. Optogenetic control of PRC1 reveals its role in chromosome alignment on the spindle by overlap length-dependent forces. Elife 10: e61170.
5. Vukušic, K., et al. 2021. Microtubule-sliding modules based on kinesins EG5 and PRC1-dependent KIF4A drive human spindle elongation. Dev. Cell 56: 1253-1267.e10.
6. Bader, A.S. and Bushell, M. 2021. Damage-Net: a program for DNA repair meta-analysis identifies a network of novel repair genes that facilitate cancer evolution. DNA Repair 105: 103158.
7. Risteski, P., et al. 2022. Length-dependent poleward flux of sister kinetochore fibers promotes chromosome alignment. Cell Rep. 40: 111169.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.