SANTA CRUZ BIOTECHNOLOGY, INC.

Dynein IC1/2, cytosolic (74-1): sc-13524

BACKGROUND

Dyneins are multisubunit, high molecular weight ATPases that interact with microtubules to generate force by converting the chemical energy of ATP into the mechanical energy of movement. Cytoplasmic or axonemal Dynein heavy, intermediate, light and light-intermediate chains are all components of minus end-directed motors; the complex transports cellular cargos towards the central region of the cell. Axonemal Dynein motors contain one to three non-identical heavy chains and cause a sliding of microtubules in the axonemes of cilia and flagella in a mechanism necessary for cilia to beat and propel the cell. Cytoplasmic Dyneins, such as Dynein IC1, cytosolic and Dynein IC2, cytosolic, comprise an approximately 12 subunit complex of 2 heavy chains, 2 intermediate chains to anchor Dynein to its cargo, 4 smaller intermediate chains and several light chains. This complex performs functions necessary for cell survival, such as organelle transport and centrosome assembly. The carboxy terminus of Dynein is important for microtubule-dependent motility and is highly conserved, while the amino terminal regions are more variable. Several proteins regulate Dynein activity, including dynactin, LIS1 and NudEL(NudE-like).

CHROMOSOMAL LOCATION

Genetic locus: DYNC1I1 (human) mapping to 7q21.3, DYNC1I2 (human) mapping to 2q31.1; Dync1i1 (mouse) mapping to 6 A1, Dync1i2 (mouse) mapping to 2 C2.

SOURCE

Dynein IC1/2, cytosolic (74-1) is a mouse monoclonal antibody raised against purified cytosolic dynein from brain tissue of bovine origin.

PRODUCT

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

Dynein IC1/2, cytosolic (74-1) is available conjugated to agarose (sc-13524 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-13524 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-13524 PE), fluorescein (sc-13524 FITC), Alexa Fluor® 488 (sc-13524 AF488), Alexa Fluor® 546 (sc-13524 AF546), Alexa Fluor® 594 (sc-13524 AF594) or Alexa Fluor® 647 (sc-13524 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-13524 AF680) or Alexa Fluor® 790 (sc-13524 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

PROTOCOLS

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

APPLICATIONS

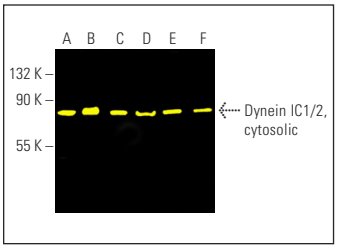
Dynein IC1/2, cytosolic (74-1) is recommended for detection of intermediate chains 1 and 2 or cytosolic Dynein of broad species origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

Molecular Weight of Dynein IC1, cytosolic: 74 kDa.

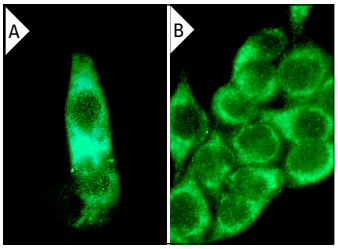
Molecular Weight of Dynein IC2, cytosolic: 72 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, L8 cell lysate: sc-3807 or RAW 264.7 whole cell lysate: sc-2211.

DATA



Dynein IC1/2, cytosolic (74-1) Alexa Fluor® 488: sc-13524 AF488. Direct fluorescent western blot analysis of Dynein IC1/2, cytosolic expression in T98G (**A**), IMR-32 (**B**), HeLa (**C**), L8 (**D**), U-87 MG (**E**) and RAW 264.7 (**F**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.



Dynein IC1/2, cytosolic (74-1): sc-13524. Immunofluorescence staining of methanol-fixed T98G cells showing cytoplasmic localization using indirect FITC (**A**) staining and HeLa cells using direct Alexa Fluor® 488 (**B**) staining.

SELECT PRODUCT CITATIONS

1. Sanada, K., et al. 2004. Disabled-1-regulated adhesion of migrating neurons to radial glial fiber contributes to neuronal positioning during early corticogenesis. Neuron 42: 197-211.
2. Shi, L., et al. 2018. Coupling of microtubule motors with AP-3 generated organelles in axons by NEEP21 family member calcyon. Mol. Biol. Cell 29: 2055-2068.
3. Chen, M.K., et al. 2019. H_2O_2 induces nuclear transport of the receptor tyrosine kinase c-MET in breast cancer cells via a membrane-bounded retrograde trafficking mechanism. J. Biol. Chem. 294: 8516-8528.
4. Leca, I., et al. 2020. A proteomic survey of microtubule-associated proteins in a R402H TUBA1A mutant mouse. PLoS Genet. 16: e1009104.
5. Suh, B.K., et al. 2021. Schizophrenia-associated dysbindin modulates axonal mitochondrial movement in cooperation with $p150^{glued}$. Mol. Brain 14: 14.
6. Argenty, J., et al. 2022. A selective LIS1 requirement for mitotic spindle assembly discriminates distinct T-cell division mechanisms within the T-cell lineage. Elife 11: e80277.

RESEARCH USE

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