SANTA CRUZ BIOTECHNOLOGY, INC.

Dynein HC (C-5): sc-514579

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 Dynein is 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. It 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: DYNC1H1 (human) mapping to 14q32.31; Dync1h1 (mouse) mapping to 12 F1.

SOURCE

Dynein HC (C-5) is a mouse monoclonal antibody raised against amino acids 4320-4644 of Dynein HC of rat 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.

Dynein HC (C-5) is available conjugated to agarose (sc-514579 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-514579 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514579 PE), fluorescein (sc-514579 FITC), Alexa Fluor® 488 (sc-514579 AF488), Alexa Fluor® 546 (sc-514579 AF546), Alexa Fluor® 594 (sc-514579 AF594) or Alexa Fluor® 647 (sc-514579 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514579 AF680) or Alexa Fluor® 790 (sc-514579 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Dynein HC (C-5) is recommended for detection of Dynein HC 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 Dynein HC siRNA (h): sc-43738, Dynein HC siRNA (m): sc-44778, Dynein HC shRNA Plasmid (h): sc-43738-SH, Dynein HC shRNA Plasmid (m): sc-44778-SH, Dynein HC shRNA (h) Lentiviral Particles: sc-43738-V and Dynein HC shRNA (m) Lentiviral Particles: sc-44778-V.

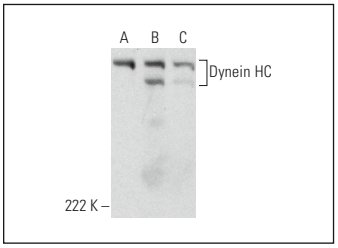
Molecular Weight of Dynein HC: > 500 kDa.

Positive Controls: 3T3-L1 cell lysate: sc-2243, PC-3 cell lysate: sc-2220 or U-87 MG cell lysate: sc-2411.

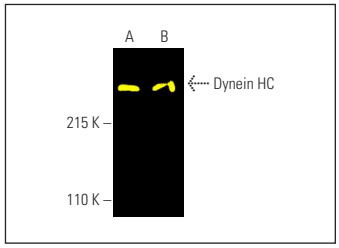
STORAGE

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

DATA



Dynein HC (C-5): sc-514579. Western blot analysis of Dynein HC expression in HUV-EC-C (**A**), 3T3-L1 (**B**) and L8 (**C**) whole cell lysates.



Dynein HC (C-5) Alexa Fluor® 488: sc-514579 AF488. Direct fluorescent western blot analysis of Dynein HC expression in PC-3 (**A**) and U-87 MG (**B**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.

SELECT PRODUCT CITATIONS

1. Phadwal, K., et al. 2018. Spermine increases acetylation of tubulins and facilitates autophagic degradation of prion aggregates. Sci. Rep. 8: 10004.
2. Hu, M., et al. 2019. Respiratory syncytial virus co-opts host mitochondrial function to favour infectious virus production. Elife 8: e42448.
3. Stiff, T., et al. 2020. Prophase-specific perinuclear Actin coordinates centrosome separation and positioning to ensure accurate chromosome segregation. Cell Rep. 31: 107681.
4. Quintanilla, R.A., et al. 2020. Truncated Tau induces mitochondrial transport failure through the impairment of TRAK2 protein and bioenergetics decline in neuronal cells. Front. Cell. Neurosci. 14: 175.
5. Shi, J., et al. 2022. Repurposing oxiconazole against colorectal cancer via PRDX2-mediated autophagy arrest. Int. J. Biol. Sci. 18: 3747-3761.
6. Wu, J., et al. 2023. Microtubule nucleation from the fibrous corona by LIC1-pericentrin promotes chromosome congression. Curr. Biol. 33: 912-925.e6.
7. D'Souza, A.I., et al. 2023. Vesicles driven by dynein and kinesin exhibit directional reversals without regulators. Nat. Commun. 14: 7532.
8. Wang, L., et al. 2024. Map-1a regulates Sertoli cell BTB dynamics through the cytoskeletal organization of microtubule and F-Actin. Reprod. Biol. Endocrinol. 22: 36.
9. Omer, S., et al. 2024. Ninein promotes F-Actin cup formation and inward phagosome movement during phagocytosis in macrophages. Mol. Biol. Cell 35: ar26.

RESEARCH USE

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