

Dynein IC1/2, cytosolic (C-2): sc-136971

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).

REFERENCES

1. Mallik, R., et al. 2004. Cytoplasmic Dynein functions as a gear in response to load. *Nature* 427: 649-652.
2. Malikov, V., et al. 2004. Cytoplasmic Dynein nucleates microtubules to organize them into radial arrays *in vivo*. *Mol. Biol. Cell* 15: 2742-2749.
3. Asai, D.J., et al. 2004. The Dynein heavy chain family. *J. Eukaryot. Microbiol.* 51: 23-29.
4. Seetharam, R.N., et al. 2005. High speed sliding of axonemal microtubules produced by outer arm Dynein. *Cell Motil. Cytoskeleton* 60: 96-103.
5. Lee, W.L., et al. 2005. The offloading model for Dynein function: differential function of motor subunits. *J. Cell Biol.* 168: 201-207.
6. He, Y., et al. 2005. Role of cytoplasmic Dynein in the axonal transport of microtubules and neurofilaments. *J. Cell Biol.* 168: 697-703.
7. Pfister, K.K., et al. 2005. Cytoplasmic Dynein nomenclature. *J. Cell Biol.* 171: 411-413.
8. McGrath, J.L. 2005. Dynein motility: four heads are better than two. *Curr. Biol.* 15: 970-972.

CHROMOSOMAL LOCATION

Genetic locus: DYNC111 (human) mapping to 7q21.3, DYNC112 (human) mapping to 2q31.1; Dync1i2 (mouse) mapping to 2 C2.

SOURCE

Dynein IC1/2, cytosolic (C-2) is a mouse monoclonal antibody raised against amino acids 339-638 mapping at the C-terminus of Dynein IC1, cytosolic of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Dynein IC1/2, cytosolic (C-2) is recommended for detection of Dynein IC1, cytosolic of human origin, and Dynein IC2, cytosolic 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).

Molecular Weight of Dynein IC1, cytosolic: 74 kDa.

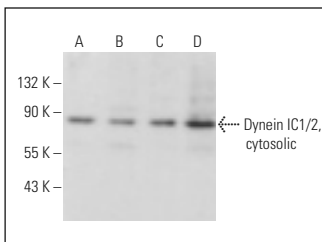
Molecular Weight of Dynein IC2, cytosolic: 72 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, IMR-32 cell lysate: sc-2409 or RAW 264.7 whole cell lysate: sc-2211.

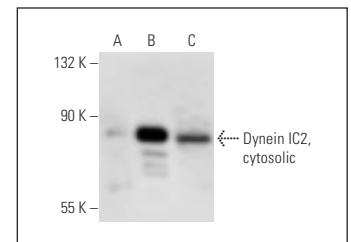
RECOMMENDED SUPPORT REAGENTS

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



Dynein IC1/2, cytosolic (C-2): sc-136971. Western blot analysis of Dynein IC1/2, cytosolic expression in IMR-32 (A), HeLa (B), RAW 264.7 (C) and C6 (D) whole cell lysates.



Dynein IC1/2, cytosolic (C-2): sc-136971. Western blot analysis of Dynein IC2, cytosolic expression in non-transfected 293: sc-110760 (A), human Dynein IC2, cytosolic transfected 293: sc-112239 (B) and IMR-32 (C) whole cell lysates.

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.



See **Dynein IC1/2, cytosolic (74-1): sc-13524** for Dynein IC1/2, cytosolic antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.