

Dynein IC1/2, cytosolic (2Q46): sc-70997

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 two heavy chains, two intermediate chains to anchor Dynein to its cargo, four 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).

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. Li, J., et al. 2005. NudEL targets Dynein to microtubule ends through LIS1. *Nat. Cell Biol.* 7: 686-690.
5. Seetharam, R.N., et al. 2005. High speed sliding of axonemal microtubules produced by outer arm Dynein. *Cell Motil. Cytoskeleton* 60: 96-103.
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; Dync1i1 (mouse) mapping to 6 A1, Dync1i2 (mouse) mapping to 2 C2.

SOURCE

Dynein IC1/2, cytosolic (2Q46) 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.

APPLICATIONS

Dynein IC1/2, cytosolic (2Q46) is recommended for detection of intermediate chains 1 and 2 of 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 10⁶ cells).

Molecular Weight of Dynein IC1, cytosolic: 74 kDa.

Molecular Weight of Dynein IC2, cytosolic: 72 kDa.

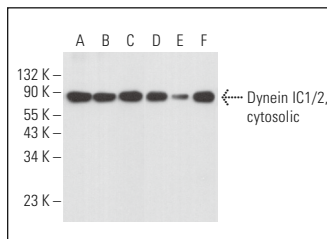
Positive Controls: K-562 whole cell lysate: sc-2203, Jurkat whole cell lysate: sc-2204 or HeLa whole cell lysate: sc-2200.

RECOMMENDED SUPPORT REAGENTS

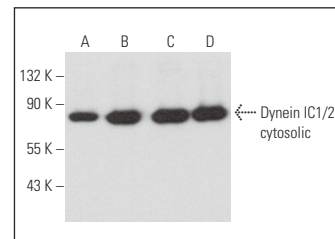
To ensure optimal results, the following support reagents are recommended:

- 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 (2Q46): sc-70997. Western blot analysis of Dynein IC1/2, cytosolic expression in HeLa (A), RAW 264.7 (B) and EOC 20 (C) whole cell lysates and mouse brain (D), rat postnatal heart (E) and rat hippocampus (F) tissue extracts.



Dynein IC1/2, cytosolic (2Q46): sc-70997. Western blot analysis of Dynein IC1/2, cytosolic expression in Raji (A), K-562 (B), Jurkat (C) and RT-4 (D) 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.