SANTA CRUZ BIOTECHNOLOGY, INC.

Dynein IC1, cytosolic (S-20): sc-32191

The Power to Question

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 two heavy chains, two intermediate chains to anchor Dynein to its cargo, four 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. 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. Lee, W.L., et al. 2005. The offloading model for Dynein function: differential function of motor subunits. J. Cell Biol. 168: 201-207.

CHROMOSOMAL LOCATION

Genetic locus: DNCI1 (human) mapping to 7q21.3; Dncic1 (mouse) mapping to 6 A1.

SOURCE

Dynein IC1, cytosolic (S-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Dynein IC1, cytosolic of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-32191 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

Dynein IC1, cytosolic (S-20) is recommended for detection of Dynein intermediate chain 1, cytosolic of human, rat and, to a lesser extent, mouse 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).

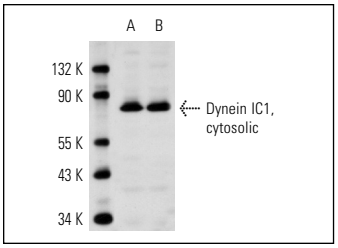
Dynein IC1, cytosolic (S-20) is also recommended for detection of Dynein intermediate chain 1, cytosolic in additional species, including equine, canine and avian.

Suitable for use as control antibody for Dynein IC1, cytosolic siRNA (h): sc-44673, Dynein IC1, cytosolic siRNA (m): sc-44674, Dynein IC1, cytosolic shRNA Plasmid (h): sc-44673-SH, Dynein IC1, cytosolic shRNA Plasmid (m): sc-44674-SH, Dynein IC1, cytosolic shRNA (h) Lentiviral Particles: sc-44673-V and Dynein IC1, cytosolic shRNA (m) Lentiviral Particles: sc-44674-V.

Molecular Weight of Dynein IC1, cytosolic: 74 kDa.

Positive Controls: rat brain extract: sc-2392.

DATA



Dynein IC1, cytosolic (S-20): sc-32191. Western blot analysis of Dynein IC1, cytosolic expression in rat (**A**) and mouse (**B**) brain tissue extracts.

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 or our catalog for detailed protocols and support products.