

Dynein IC1, axonemal (V-18): sc-32209

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.
7. He, Y., et al. 2005. Role of cytoplasmic dynein in the axonal transport of microtubules and neurofilaments. *J. Cell Biol.* 168: 697-703.
8. Pfister, K.K., et al. 2005. Cytoplasmic dynein nomenclature. *J. Cell Biol.* 171: 411-413.
9. McGrath, J.L. 2005. Dynein motility: four heads are better than two. *Curr. Biol.* 15: R970-R972.

CHROMOSOMAL LOCATION

Genetic locus: DNAI1 (human) mapping to 9p13.3; Dnaic1 (mouse) mapping to 4 A5.

SOURCE

Dynein IC1, axonemal (V-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Dynein IC1, axonemal 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-32209 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Dynein IC1, axonemal (V-18) is recommended for detection of axonemal Dynein intermediate chain 1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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, axonemal (V-18) is also recommended for detection of axonemal dynein intermediate chain 1 in additional species, including canine.

Suitable for use as control antibody for Dynein IC1, axonemal siRNA (h): sc-44689, Dynein IC1, axonemal siRNA (m): sc-44690, Dynein IC1, axonemal shRNA Plasmid (h): sc-44689-SH, Dynein IC1, axonemal shRNA Plasmid (m): sc-44690-SH, Dynein IC1, axonemal shRNA (h) Lentiviral Particles: sc-44689-V and Dynein IC1, axonemal shRNA (m) Lentiviral Particles: sc-44690-V.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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.

PROTOCOLS

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