SANTA CRUZ BIOTECHNOLOGY, INC.

DNAL1 (C-12): sc-164197

BACKGROUND

Dyneins are multi-subunit, 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. Dynein complexes transport cellular cargos toward the central region of the cell. Containing one to three non-identical heavy chains, axonemal dynein motors cause a sliding of microtubules in the axonemes of cilia and flagella in a mechanism necessary for cilia movement and cell propulsion. DNAL1 (dynein light chain 1, axonemal), also known as MGC12435 or C14orf168, is a 190 amino acid member of the dynein light chain LC1-type protein family. Containing four leucine-rich repeats, DNAL1 interacts directly with DNAH5. DNAL1 is expressed in testis and other tissues carrying motile cilia.

REFERENCES

1. Asai, D.J., et al. 2004. The dynein heavy chain family. J. Eukaryot. Microbiol. 51: 23-29.
2. Chuang, J.Z., Yeh, T.Y., Bollati, F., Conde, C., Canavosio, F., Caceres, A. and Sung, C.H. 2005. The dynein light chain Tctex-1 has a dynein-independent role in actin remodeling during neurite outgrowth. Dev. Cell 9: 75-86.
3. Horváth, J., Fliegauf, M., Olbrich, H., Kispert, A., King, S.M., Mitchison, H., Zariwala, M.A., Knowles, M.R., Sudbrak, R., Fekete, G., Neesen, J., Reinhardt, R. and Omran, H. 2005. Identification and analysis of axonemal dynein light chain 1 in primary ciliary dyskinesia patients. Am. J. Respir. Cell Mol. Biol. 33: 41-47.
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: R970-972.
9. 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: DNAL1 (human) mapping to 14q24.3; Dnalc1 (mouse) mapping to 12 D1.

SOURCE

DNAL1 (C-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of DNAL1 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-164197 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

DNAL1 (C-12) is recommended for detection of DNAL1 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); non cross-reactive with DNAL4 or DNALI1.

Suitable for use as control antibody for DNAL1 siRNA (h): sc-92243, DNAL1 siRNA (m): sc-143114, DNAL1 shRNA Plasmid (h): sc-92243-SH, DNAL1 shRNA Plasmid (m): sc-143114-SH, DNAL1 shRNA (h) Lentiviral Particles: sc-92243-V and DNAL1 shRNA (m) Lentiviral Particles: sc-143114-V.

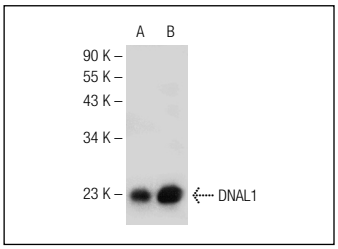
Molecular Weight of DNAL1 isoforms: 22/9 kDa.

Positive Controls: mouse testis extract: sc-2405 or rat testis extract: sc-2400.

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.

DATA



DNAL1 (C-12): sc-164197. Western blot analysis of DNAL1 expression in mouse testis (**A**) and rat testis (**B**) tissue extracts.

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.