SANTA CRUZ BIOTECHNOLOGY, INC.

DNAL1 (AT29E4): sc-517398

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 pro-pulsion. 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

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2. Chuang, J.Z., et al. 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., et al. 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-R972.
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.

SOURCE

DNAL1 (AT29E4) is a mouse monoclonal antibody raised against a recombinant protein corresponding to amino acids 1-190 of DNAL1 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

DNAL1 (AT29E4) is recommended for detection of DNAL1 of human 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), flow cytometry (1 µg per 1 x 10^6 cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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

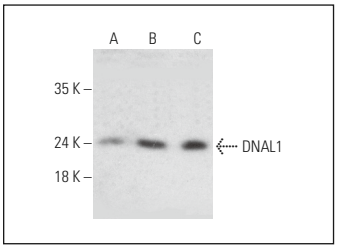
Molecular Weight of DNAL1 isoforms: 22/9 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, HeLa whole cell lysate: sc-2200 or Hep G2 cell lysate: sc-2227.

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



DNAL1 (AT29E4): sc-517398. Western blot analysis of DNAL1 expression in MCF7 (**A**), HeLa (**B**) and Hep G2 (**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.

PROTOCOLS

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