SANTA CRUZ BIOTECHNOLOGY, INC.

DYNLL1 (4): sc-136287

SANTA CRUZ BIOTECHNOLOGY

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. The highly conserved DYNLL proteins were originally identified as light chains for microtubule-based motor protein Dynein. In mammals there are two closely related isoforms expressed, DYNLL1 and DYNLL2 which share 93% sequence identity at the protein level. DYNLL1 (Dynein light chain 1) also designated, DLC8 or PIN (protein inhibitor of neuronal nitric oxide synthase) has been identified as a protein that interacts with NOS1 resulting in NOS1 inhibition. Dimerization is required for NOS1 activity and DYNLL1 has been shown to destabilize the NOS1 dimer. Nitric oxide may be involved in several processes such as apoptosis, synaptogenesis and neuronal development; thus DYNLL1 is implicated in these processes as well. DYNLL1 is a ubiquitously expressed protein that exhibits high expression in testis and moderate expression in brain. DYNLL2 (Dynein light chain 2) is subject to a unique alternative splicing event which is implicated in Myosin Va binding specificity.

CHROMOSOMAL LOCATION

Genetic locus: DYNLL1 (human) mapping to 12q24.31; Dynll1 (mouse) mapping to 5 F.

SOURCE

DYNLL1 (4) is a mouse monoclonal antibody raised against amino acids 1-89 representing full length DYNLL1 of rat origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

DYNLL1 (4) is recommended for detection of DYNLL1 of mouse, rat and 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for DYNLL1 siRNA (h): sc-36228, DYNLL1 siRNA (m): sc-36229, DYNLL1 shRNA Plasmid (h): sc-36228-SH, DYNLL1 shRNA Plasmid (m): sc-36229-SH, DYNLL1 shRNA (h) Lentiviral Particles: sc-36228-V and DYNLL1 shRNA (m) Lentiviral Particles: sc-36229-V.

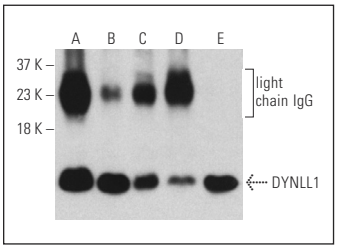
Molecular Weight of DYNLL1: 10 kDa.

Positive Controls: mouse testis extract: sc-2405, rat testis extract: sc-2400 or Hep G2 cell lysate: sc-2227.

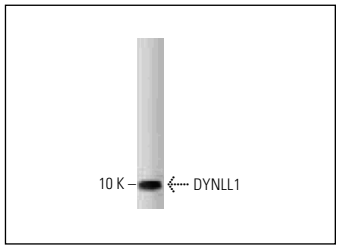
RECOMMENDED SUPPORT REAGENTS

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



DYNLL1 (4): sc-136287. Western blot analysis of DYNLL1 expression in mouse testis (**A**), rat testis (**B**), rat cerebellum (**C**) and rat spinal cord (**D**) tissue extracts and Hep G2 whole cell lysate (**E**). Detection reagent used: m-IgGκ BP-HRP: sc-516102. Note presence of light chain IgG.



DYNLL1 (4): sc-136287. Western blot analysis of DYNLL1 expression in rat cerebrum tissue extract.

SELECT PRODUCT CITATIONS

1. Shioda, N., et al. 2018. Targeting G-quadruplex DNA as cognitive function therapy for ATR-X syndrome. Nat. Med. 24: 802-813.
2. Sun, H., et al. 2021. Dysregulated Dynein-mediated trafficking of nephrin causes INF2-related podocytopathy. J. Am. Soc. Nephrol. 32: 307-322.
3. Sun, H., et al. 2023. Dynein-mediated trafficking: a new mechanism of diabetic podocytopathy. Kidney360 4: 162-176.
4. Sun, J., et al. 2023. Cadmium promotes nonalcoholic fatty liver disease by inhibiting intercellular mitochondrial transfer. Cell. Mol. Biol. Lett. 28: 87.

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.