

DYNLL1/2 (FL-89): sc-13969

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, DYNLL2 (human) mapping to 17q22; Dynll1 (mouse) mapping to 5 F, Dynll2 (mouse) mapping to 11 C.

SOURCE

DYNLL1/2 (FL-89) is a rabbit polyclonal antibody raised against amino acids 1-89 mapping near the N-terminus of DYNLL1 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.

STORAGE

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

APPLICATIONS

DYNLL1/2 (FL-89) is recommended for detection of DYNLL1 and DYNLL2 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000). DYNLL1/2 (FL-89) is also recommended for detection of DYNLL1 and DYNLL2 in additional species, including equine, canine, bovine, porcine and avian.

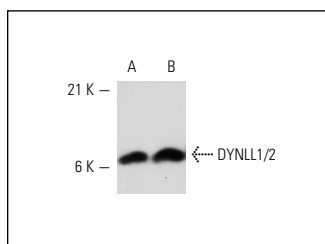
Molecular Weight of DYNLL1/2: 10 kDa.

Positive Controls: human platelet extract: sc-363773, HeLa whole cell lysate: sc-2200 or mouse testis extract: sc-2405.

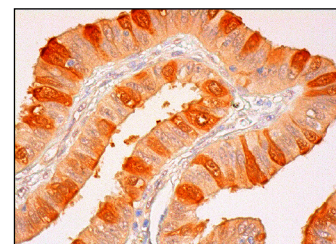
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



DYNLL1/2 (FL-89): sc-13969. Western blot analysis of DYNLL1/2 expression in HeLa whole cell lysate (A) and mouse testis tissue extract (B).



DYNLL1/2 (FL-89): sc-13969. Immunoperoxidase staining of formalin fixed, paraffin-embedded human fallopian tube tissue showing cytoplasmic and nuclear staining of glandular cells.

SELECT PRODUCT CITATIONS

- Rayala, S.K., et al. 2005. Functional regulation of oestrogen receptor pathway by the dynein light chain 1. *EMBO Rep.* 6: 538-544.
- Wang, J., et al. 2010. Selective unresponsiveness to the inhibition of p38 MAPK activation by cAMP helps L929 fibroblastoma cells escape TNF- α -induced cell death. *Mol. Cancer* 9: 6.
- Jurado, S., et al. 2012. ATM substrate Chk2-interacting Zn²⁺ finger (ASCIZ) is a bi-functional transcriptional activator and feedback sensor in the regulation of dynein light chain (DYNLL1) expression. *J. Biol. Chem.* 287: 3156-3164.
- Mezghenna, K., et al. 2014. Counteracting neuronal nitric oxide synthase proteasomal degradation improves glucose transport in Insulin-resistant skeletal muscle from Zucker fa/fa rats. *Diabetologia* 57: 177-186.

RESEARCH USE

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



Try **DYNLL2 (1G7): sc-293315**, our highly recommended monoclonal alternative to DYNLL1/2 (FL-89).