

Dynactin 2 (E-15): sc-167697

BACKGROUND

Dynactin is a multisubunit complex that functions as a binding partner for the Dynein microtubule motor. Dynactin-Dynein binding may be required for most, if not all, cytoplasmic Dynein-driven activities and is thought to contribute to the functional diversity of Dynein. Dynactin 2, also known as DCTN2, Dynamitin or DCTN50, is a peripheral membrane protein that is one of many subunits in the Dynactin complex. Like other Dynactin subunits, Dynactin 2 mediates Dynein-organelle binding and helps to regulate chromosome alignment during prometaphase and spindle organization during mitosis. Overexpression of Dynactin 2 disrupts the Dynactin-Dynein complex, thus inhibiting retrograde axonal transport and causing motor neuron degeneration. Additionally, overexpression of Dynactin 2 may disrupt the cell cycle and lead to osteosarcoma, suggesting a possible role for Dynactin 2 in carcinogenesis.

REFERENCES

1. Echeverri, C.J., et al. 1996. Molecular characterization of the 50-kD subunit of dynactin reveals function for the complex in chromosome alignment and spindle organization during mitosis. *J. Cell Biol.* 132: 617-633.
2. Berrueta, L., et al. 1999. The APC-associated protein EB1 associates with components of the dynactin complex and cytoplasmic dynein intermediate chain. *Curr. Biol.* 9: 425-428.
3. Merdes, A., et al. 2000. Formation of spindle poles by dynein/dynactin-dependent transport of NuMA. *J. Cell Biol.* 149: 851-862.
4. Karki, S., et al. 2000. A dynactin subunit with a highly conserved cysteine-rich motif interacts directly with Arp1. *J. Biol. Chem.* 275: 4834-4839.
5. Hoogenraad, C.C., et al. 2001. Mammalian Golgi-associated Bicaudal-D2 functions in the dynein-dynactin pathway by interacting with these complexes. *EMBO J.* 20: 4041-4054.
6. LaMonte, B.H., et al. 2002. Disruption of dynein/dynactin inhibits axonal transport in motor neurons causing late-onset progressive degeneration. *Neuron* 34: 715-727.
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CHROMOSOMAL LOCATION

Genetic locus: DCTN2 (human) mapping to 12q13.3; Dctn2 (mouse) mapping to 10 D3.

SOURCE

Dynactin 2 (E-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Dynactin 2 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-167697 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Dynactin 2 (E-15) is recommended for detection of Dynactin 2 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with other Dynactin family members.

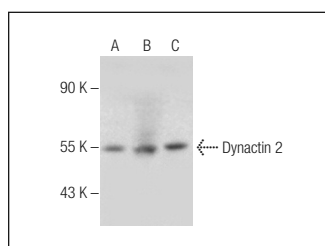
Dynactin 2 (E-15) is also recommended for detection of Dynactin 2 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Dynactin 2 siRNA (h): sc-95708, Dynactin 2 siRNA (m): sc-143202, Dynactin 2 shRNA Plasmid (h): sc-95708-SH, Dynactin 2 shRNA Plasmid (m): sc-143202-SH, Dynactin 2 shRNA (h) Lentiviral Particles: sc-95708-V and Dynactin 2 shRNA (m) Lentiviral Particles: sc-143202-V.

Molecular Weight of Dynactin 2: 50 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, HL-60 whole cell lysate: sc-2209 or MCF7 whole cell lysate: sc-2206.

DATA



Dynactin 2 (E-15): sc-167697. Western blot analysis of Dynactin 2 expression in K-562 (A), HL-60 (B) and AML-193 (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 or our catalog for detailed protocols and support products.



Try **Dynactin 2 (G-4): sc-393389**, our highly recommended monoclonal alternative to Dynactin 2 (E-15).