

# Dynactin 2 (E-7): sc-365565

## 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, Dynamin 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 kDa 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.
7. Uetake, Y., et al. 2004. Interaction of Cep135 with a p50 Dynactin subunit in mammalian centrosomes. *Cell Motil. Cytoskeleton* 58: 53-66.

## CHROMOSOMAL LOCATION

Genetic locus: DCTN2 (human) mapping to 12q13.3.

## SOURCE

Dynactin 2 (E-7) is a mouse monoclonal antibody raised against amino acids 102-401 mapping at the C-terminus of Dynactin 2 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> 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

Dynactin 2 (E-7) is recommended for detection of Dynactin 2 of human origin by Western Blotting (starting dilution 1:100, 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).

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

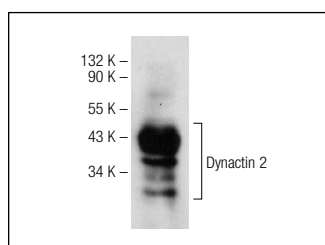
Molecular Weight of Dynactin 2: 50 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



Dynactin 2 (E-7): sc-365565. Western blot analysis of Dynactin 2 expression in MCF7 whole cell lysate.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.