SANTA CRUZ BIOTECHNOLOGY, INC.

Eg5 (D-7): sc-393311

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Eukaryotes contain a superfamily of microtubule-based motor proteins comprising kinesin and a number of related proteins that are thought to participate in various forms of intracellular motility, including cell division and organelle transport. Eg5 (also known as kinesin-like protein KIF11, or TRIP5) is a slow, plus-end-directed microtubule-based motor of the BimC kinesin family that is essential for bipolar spindle formation during eukaryotic cell division. When the expression of Eg5 is blocked, centrosome migration halts and cells are arrested in mitosis with monoastral microtubule arrays. Eg5 is phosphorylated on serine during S phase and on both serine and Thr 927 during mitosis, which regulates the association of Eg5 with the spindle apparatus (probably during early prophase). Eg5 is also known to be a member of the thyroid receptor interacting protein (Trip) family, and interacts with the thyroid hormone receptor only in the presence of thyroid hormone.

REFERENCES

1. Blangy, A., et al. 1995. Phosphorylation by $p34^{cdc2}$ regulates spindle association of human Eg5, a kinesin-related motor essential for bipolar spindle formation *in vivo*. Cell 83: 1159-1169.
2. Lee, J.W., et al. 1995. Two classes of proteins dependent on either the presence or absence of thyroid hormone for interaction with the thyroid hormone receptor. Mol. Endocrinol. 9: 243-254.
3. Nakagawa, T., et al. 1997. Identification and classification of 16 new kinesin superfamily (KIF) proteins in mouse genome. Proc. Natl. Acad. Sci. USA 94: 9654-9659.
4. Whitehead, C.M., et al. 1998. Expanding the role of HsEg5 within the mitotic and post-mitotic phases of the cell cycle. J. Cell Sci. 111: 2551-2561.
5. Ferhat, L., et al. 1998. Expression of the mitotic motor protein Eg5 in postmitotic neurons: implications for neuronal development. J. Neurosci. 18: 7822-7835.
6. Mountain, V., et al. 1999. The kinesin-related protein, HSET, opposes the activity of Eg5 and cross-links microtubules in the mammalian mitotic spindle. J. Cell Biol. 147: 351-366.
7. Cochran, J.C., et al. 2004. Mechanistic analysis of the mitotic kinesin Eg5. J. Biol. Chem. 279: 38861-38870.

CHROMOSOMAL LOCATION

Genetic locus: Kif11 (mouse) mapping to 19 C2.

SOURCE

Eg5 (D-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1013-1052 at the C-terminus of Eg5 of mouse 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.

Blocking peptide available for competition studies, sc-393311 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Eg5 (D-7) is recommended for detection of Eg5 of mouse 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 Eg5 siRNA (m): sc-37053, Eg5 shRNA Plasmid (m): sc-37053-SH and Eg5 shRNA (m) Lentiviral Particles: sc-37053-V.

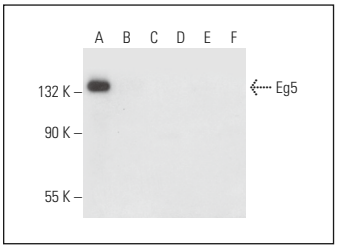
Molecular Weight of Eg5: 132 kDa.

Positive Controls: M1 whole cell lysate: sc-364782 or F9 cell lysate: sc-2245.

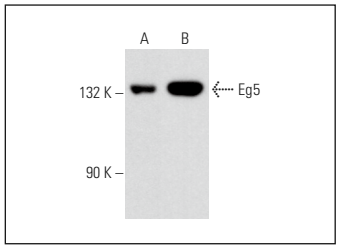
RECOMMENDED SUPPORT REAGENTS

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



Eg5 (D-7): sc-393311. Western blot analysis of Eg5 expression in M1 (**A**), MCF7 (**B**), A-431 (**C**), Jurkat (**D**), Raji (**E**) and K-562 (**F**) whole cell lysates. Note lack of reactivity with human Eg5 in lanes **B**-**F**.



Eg5 (D-7): sc-393311. Western blot analysis of Eg5 expression in M1 (**A**) and F9 (**B**) 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.