

Eg5 (10C7/Eg5): sc-53691

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

- Blangy, A., et al. 1995. Phosphorylation by p34Cdc2 regulates spindle association of human Eg5, a kinesin-related motor essential for bipolar spindle formation *in vivo*. *Cell* 83: 159-169.
- 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.
- 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.
- 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.
- Ferhat, L., et al. 1998. Expression of the mitotic motor protein Eg5 in postmitotic neurons: implications for neuronal development. *J. Neurosci.* 18: 7822-7835.
- 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.
- Cochran, J.C., et al. 2004. Mechanistic analysis of the mitotic Kinesin Eg5. *J. Biol. Chem.* 279: 38861-38870.

CHROMOSOMAL LOCATION

Genetic locus: KIF11 (human) mapping to 10q23.33; Kif11 (mouse) mapping to 19 C2.

SOURCE

Eg5 (10C7/Eg5) is a mouse monoclonal antibody raised against amino acids 200-500 of Eg5 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Eg5 (10C7/Eg5) is recommended for detection of Eg5 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for Eg5 siRNA (h): sc-37052, Eg5 siRNA (m): sc-37053, Eg5 shRNA Plasmid (h): sc-37052-SH, Eg5 shRNA Plasmid (m): sc-37053-SH, Eg5 shRNA (h) Lentiviral Particles: sc-37052-V and Eg5 shRNA (m) Lentiviral Particles: sc-37053-V.

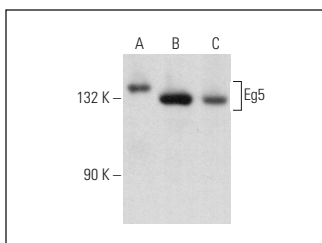
Molecular Weight of Eg5: 132 kDa.

Positive Controls: M1 whole cell lysate: sc-364782, Raji whole cell lysate: sc-364236 or A-431 whole cell lysate: sc-2201.

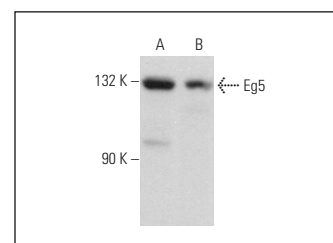
RECOMMENDED SUPPORT REAGENTS

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).

DATA



Eg5 (10C7/Eg5): sc-53691. Western blot analysis of Eg5 expression in M1 (A), Raji (B) and A-431 (C) whole cell lysates.



Eg5 (10C7/Eg5): sc-53691. Western blot analysis of Eg5 expression in HeLa (A) and SK-BR-3 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

- Borysov, S.I., et al. 2011. Alzheimer Aβ disrupts the mitotic spindle and directly inhibits mitotic microtubule motors. *Cell Cycle* 10: 1397-1410.
- Drosopoulos, K., et al. 2014. APC/C is an essential regulator of centrosome clustering. *Nat. Commun.* 5: 3686.
- Kato, T., et al. 2018. Personalized siRNA-nanoparticle systemic therapy using metastatic lymph node specimens obtained with EBUS-TBNA in lung cancer. *Mol. Cancer Res.* 16: 47-57.

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.