

Eg5 (A-1): sc-365681

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. KIF11 (also known as kinesin family member 11, Eg5 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 KIF11 is blocked, centrosome migration halts and cells are arrested in mitosis with monoastral microtubule arrays. KIF11 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). KIF11 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.

CHROMOSOMAL LOCATION

Genetic locus: KIF11 (human) mapping to 10q23.33.

SOURCE

Eg5 (A-1) is a mouse monoclonal antibody raised against amino acids 758-1057 mapping at the C-terminus 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 (A-1) is recommended for detection of kinesin-related motor protein Eg5 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 Eg5 siRNA (h): sc-37052, Eg5 shRNA Plasmid (h): sc-37052-SH and Eg5 shRNA (h) Lentiviral Particles: sc-37052-V.

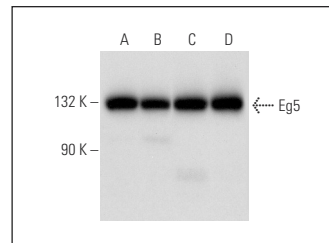
Molecular Weight of Eg5: 132 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, HeLa whole cell lysate: sc-2200 or Raji whole cell lysate: sc-364236.

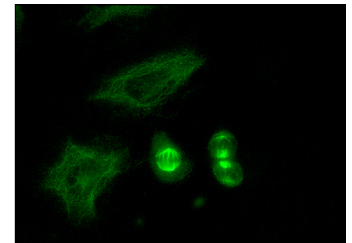
SELECT PRODUCT CITATIONS

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 (A-1): sc-365681. Western blot analysis of Eg5 expression in HeLa (A), MCF7 (B), Jurkat (C) and Raji (D) whole cell lysates.



Eg5 (A-1): sc-365681. Immunofluorescence staining of methanol-fixed HeLa cells showing mitotic spindle and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Syred, H.M., et al. 2013. Cell cycle regulation of microtubule interactomes: multi-layered regulation is critical for the interphase/mitosis transition. *Mol. Cell. Proteomics* 12: 3135-3147.
2. Schneider, M.A., et al. 2017. AURKA, DLGAP5, TPX2, KIF11 and CKAP5: five specific mitosis-associated genes correlate with poor prognosis for non-small cell lung cancer patients. *Int. J. Oncol.* 50: 365-372.
3. Jagric, M., et al. 2021. Optogenetic control of PRC1 reveals its role in chromosome alignment on the spindle by overlap length-dependent forces. *Elife* 10: e61170.
4. Vukušić, K., et al. 2021. Microtubule-sliding modules based on kinesins EG5 and PRC1-dependent KIF4A drive human spindle elongation. *Dev. Cell* 56: 1253-1267.e10.

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.