

# Eg5 (F-1): sc-374212

## 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 monoastal 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<sup>cdc2</sup> 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 (F-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1029-1057 at the C-terminus of Eg5 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Eg5 (F-1) is available conjugated to agarose (sc-374212 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374212 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374212 PE), fluorescein (sc-374212 FITC), Alexa Fluor® 488 (sc-374212 AF488), Alexa Fluor® 546 (sc-374212 AF546), Alexa Fluor® 594 (sc-374212 AF594) or Alexa Fluor® 647 (sc-374212 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374212 AF680) or Alexa Fluor® 790 (sc-374212 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-374212 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## RESEARCH USE

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

## APPLICATIONS

Eg5 (F-1) is recommended for detection of 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.

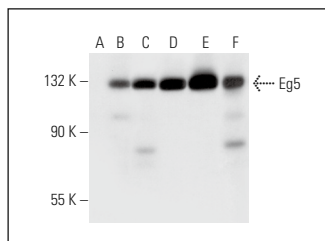
Positive Controls: A-431 whole cell lysate: sc-2201, MCF7 whole cell lysate: sc-2206 or K-562 whole cell lysate: sc-2203.

## RECOMMENDED SUPPORT REAGENTS

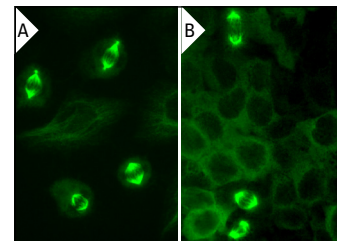
To ensure optimal results, the following support reagents are recommended:

- 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 (F-1): sc-374212. 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 mouse Eg5 in lane A.



Eg5 (F-1): sc-374212. Immunofluorescence staining of methanol-fixed HeLa (A) and A-431 (B) cells showing mitotic spindle poles localization.

## SELECT PRODUCT CITATIONS

1. Duan, Y., et al. 2016. Ubiquitin ligase RNF20/40 facilitates spindle assembly and promotes breast carcinogenesis through stabilizing motor protein Eg5. *Nat. Commun.* 7: 12648.
2. Duan, Y., et al. 2016. Corrigendum: ubiquitin ligase RNF20/40 facilitates spindle assembly and promotes breast carcinogenesis through stabilizing motor protein Eg5. *Nat. Commun.* 7: 13462.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

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