

Kaptin (N-15): sc-49219

BACKGROUND

Platelets circulate in the blood as discoid cells which, when activated, change shape by polymerizing actin into several different structures, such as filopodia and stress fibers. Platelet activation is important for hemostasis. Kaptin (more commonly referred to as 2E4) binds to filamentous (F)-actin in an ATP-dependent manner and is involved in platelet activation. Kaptin is expressed in platelets, and localizes to the leading edge of the cells, supporting its involvement in the actin rearrangements that occur during activation. Kaptin is also present at the leading edge of the elongating stereocilium cells in the inner ear which play an integral role in the mechanotransduction of sound. Kaptin is involved in stereocilia formation, and may be an important factor in the development of DFNA4, a form of autosomal dominant non-syndromic hearing loss.

REFERENCES

- Hartwig, J.H. 1992. Mechanisms of actin rearrangements mediating platelet activation. *J. Cell Biol.* 118: 1421-142.
- Bearer, E.L. 1992. An actin-associated protein present in the microtubule organizing center and the growth cones of PC-12 cells. *J. Neurosci.* 12: 750-761.
- Bearer, E.L. 1995. Cytoskeletal domains in the activated platelet. *Cell Motil. Cytoskeleton* 30: 50-66.
- Bearer, E.L. and Abraham, M.T. 1999. 2E4 (Kaptin): a novel actin-associated protein from human blood platelets found in lamellipodia and the tips of the stereocilia of the inner ear. *Eur. J. Cell Biol.* 78: 117-126.
- Weed, S.A., Karginov, A.V., Schafer, D.A., Weaver, A.M., Kinley, A.W., Cooper, J.A. and Parsons, J.T. 2000. Cortactin I interactions with F-actin and the Arp2/3 complex. *J. Cell Biol.* 151: 29-40.
- Bearer, E.L., Chen, A.F., Chen, A.H., Li, Z., Mark, H.F., Smith, R.J. and Jackson, C.L. 2001. 2E4/Kaptin (KPTN)-a candidate gene for the hearing loss locus, DFNA4. *Ann. Hum. Genet.* 64: 189-196.
- Bearer, E.L., Prakash, J.M. and Li, Z. 2002. Actin dynamics in platelets. *Int. Rev. Cytol.* 217: 137-182.

CHROMOSOMAL LOCATION

Genetic locus: KPTN (human) mapping to 19q13.32; Kptn (mouse) mapping to 7 A2.

SOURCE

Kaptin (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Kaptin of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-49219 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Kaptin (N-15) is recommended for detection of Kaptin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Kaptin (N-15) is also recommended for detection of Kaptin in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Kaptin siRNA (h): sc-60876, Kaptin siRNA (m): sc-60877, Kaptin shRNA Plasmid (h): sc-60876-SH, Kaptin shRNA Plasmid (m): sc-60877-SH, Kaptin shRNA (h) Lentiviral Particles: sc-60876-V and Kaptin shRNA (m) Lentiviral Particles: sc-60877-V.

Molecular Weight of Kaptin: 48 kDa.

Positive Controls: HeLa nuclear extract: sc-2120.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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 or our catalog for detailed protocols and support products.



Try **Kaptin (3B1): sc-100918**, our highly recommended monoclonal alternative to Kaptin (N-15).