

CARMIL (K-20): sc-67466

BACKGROUND

CARMIL, also referred to as leucine-rich repeat containing 16 (LRRC16), is a member of a recently described family of leucine-rich repeat containing proteins which have a variety of functions throughout the body. CARMIL interacts with the Arp2/3 complex, the Actin capping protein CP and Myosin I to help assemble a multi-protein structure that is crucial to proper cell development. Through its interactions with these three proteins, CARMIL regulates capping of Actin filaments at the barbed end, nucleation of Actin by the Arp2/3 complex and Actin filament assembly by Myosin I, a barbed-end directed motor. Together, this complex generates the force for diverse cellular movements such as cytokinesis, phagocytosis and muscle contraction. Defects in the gene encoding CARMIL are thought to have various detrimental effects including reduced chemotactic aggregation, lowered rates of pinocytosis and inefficient assembly of the Myosin-Arp2/3-CP complex. Without proper CARMIL function, cell development is retarded due to improper Actin filament assembly.

REFERENCES

1. Jung, G., Remmert, K., Wu, X. and Volosky, J.M. 2001. The *Dictyostelium* CARMIL protein links capping protein and the Arp2/3 complex to type I myosins through their SH3 domains. *J. Cell Biol.* 153: 1479-1497.
2. Remmert, K., Olszewski, T.E., Bowers, M.B., Dimitrova, M. and Ginsburg, A. 2004. CARMIL is a bona fide capping protein interactant. *J. Biol. Chem.* 279: 3068-3077.
3. Yang, C., Pring, M., Wear, M.A., Huang, M., Cooper, J.A., Svitkina, T.M. and Zigmond, S.H. 2005. Mammalian CARMIL inhibits Actin filament capping by capping protein. *Dev. Cell* 9: 209-221.
4. Huang, M., Pring, M., Yang, C., Taoka, M. and Zigmond, S.H. 2005. Presence of a novel inhibitor of capping protein in neutrophil extract. *Cell Motil. Cytoskeleton* 62: 232-243.
5. Uruno, T. and Remmert, K. 2006. CARMIL is a potent capping protein antagonist: identification of a conserved CARMIL domain that inhibits the activity of capping protein and uncaps capped Actin filaments. *J. Biol. Chem.* 281: 10635-10650.

CHROMOSOMAL LOCATION

Genetic locus: LRRC16 (human) mapping to 6p22.2; Lrrc16 (mouse) mapping to 13 A3.2.

SOURCE

CARMIL (K-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CARMIL 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-67466 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CARMIL (K-20) is recommended for detection of CARMIL of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

CARMIL (K-20) is also recommended for detection of CARMIL in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for CARMIL siRNA (h): sc-62080, CARMIL siRNA (m): sc-62081, CARMIL shRNA Plasmid (h): sc-62080-SH, CARMIL shRNA Plasmid (m): sc-62081-SH, CARMIL shRNA (h) Lentiviral Particles: sc-62080-V and CARMIL shRNA (m) Lentiviral Particles: sc-62081-V.

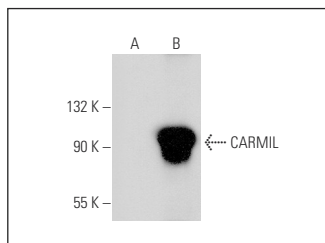
Molecular Weight of CARMIL: 125 kDa.

Positive Controls: CARMIL (m): 293T Lysate: sc-119001.

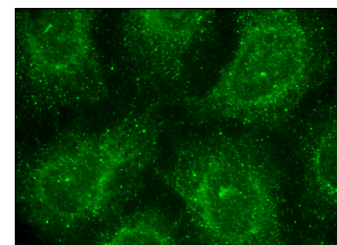
RECOMMENDED SECONDARY REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



CARMIL (K-20): sc-67466. Western blot analysis of CARMIL expression in non-transfected: sc-117752 (A) and mouse CARMIL transfected: sc-119001 (B) 293T whole cell lysates.



CARMIL (K-20): sc-67466. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear localization.

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.