

# MACF1-4 (D-10): sc-377534

## BACKGROUND

MACF1-4 (microtubule-Actin cross-linking factor 1, isoform 4) is a 5,327 amino acid protein that is encoded by the human gene MACF1. MACF1-4 belongs to the plakin or cytolinker family and contains one Actin-binding domain, 2 CH (calponin-homology) domains, 2 EF-hand domains, 19 plectin repeats and 37 spectrin repeats. MACF1-4 is an F-Actin-binding protein which may play a role in cross-linking cytoskeletal proteins by binding intermediate filaments to the N-terminal plectin repeats and microtubules to the C-terminus. The spectrin repeats, an important feature found in many proteins involved in cytoskeletal structure, forms a three helix bundle with the second helix (with proline interrupts in some sequences). MACF1-4 is a cytoplasmic protein expressed mainly in heart, lung, pituitary and placenta; however, it is not found in brain, kidney, liver, pancreas or skeletal muscle.

## REFERENCES

1. Kakinuma, T., et al. 2004. Interaction between p230 and MACF1 is associated with transport of a glycosyl phosphatidyl inositol-anchored protein from the Golgi to the cell periphery. *Exp. Cell Res.* 298: 388-398.
2. Lin, C.M., et al. 2005. Microtubule Actin crosslinking factor 1b: a novel plakin that localizes to the Golgi complex. *J. Cell Sci.* 118: 3727-3738.
3. Chen, H.J., et al. 2006. The role of microtubule Actin cross-linking factor 1 (MACF1) in the Wnt signaling pathway. *Genes Dev.* 20: 1933-1945.
4. Trinidad, J.C., et al. 2006. Comprehensive identification of phosphorylation sites in postsynaptic density preparations. *Mol. Cell. Proteomics* 5: 914-922.
5. Dai, J., et al. 2007. Protein phosphorylation and expression profiling by Yin-yang multidimensional liquid chromatography (Yin-yang MDLC) mass spectrometry. *J. Proteome Res.* 6: 250-262.

## CHROMOSOMAL LOCATION

Genetic locus: MACF1 (human) mapping to 1p34.3.

## SOURCE

MACF1-4 (D-10) is a mouse monoclonal antibody raised against amino acids 1561-1780 mapping within an internal region of MACF1, isoform 4 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.

MACF1-4 (D-10) is available conjugated to agarose (sc-377534 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377534 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377534 PE), fluorescein (sc-377534 FITC), Alexa Fluor<sup>®</sup> 488 (sc-377534 AF488), Alexa Fluor<sup>®</sup> 546 (sc-377534 AF546), Alexa Fluor<sup>®</sup> 594 (sc-377534 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-377534 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-377534 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-377534 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

MACF1-4 (D-10) is recommended for detection of MACF1 isoform 4 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 MACF1 siRNA (h): sc-75724, MACF1 shRNA Plasmid (h): sc-75724-SH and MACF1 shRNA (h) Lentiviral Particles: sc-75724-V.

Molecular Weight of MACF1-4: 671 kDa.

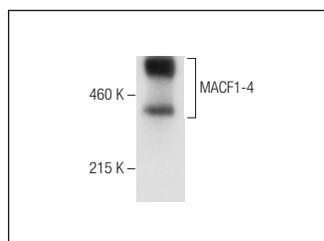
Positive Controls: human lung extract: sc-363767.

## 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<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



MACF1-4 (D-10): sc-377534. Western blot analysis of MACF1-4 expression in human lung tissue extract.

## SELECT PRODUCT CITATIONS

1. Bonner, K., et al. 2020. Inhibition of the spectraplakin protein microtubule Actin crosslinking factor 1 sensitizes glioblastomas to radiation. *Brain Tumor Res. Treat.* 8: 43-52.

## 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.