

# MK (C-18): sc-1396

## BACKGROUND

Midkine, or MK, is a 15 kDa heparin-binding molecule involved in the regulation of growth and differentiation during embryogenesis. MK expression is tightly regulated during embryonic development by steroid receptors of the retinoic acid superfamily. The mature human MK protein is 118 amino acids in length and contains 5 intrachain disulfide bonds. MK is a non-glycosylated protein that shows greater than 87% identity between human and mouse. The carboxy terminus of MK contains the principle heparin-binding site and the molecule's neurite-promoting sequences; both the amino and carboxy terminal sequences are required for the molecule's neurotrophic properties. An association between overexpression of MK and colon adenocarcinoma has been shown in families suffering from familial polyposis. In addition, MK functions to enhance the activity of plasminogen activator (PA). The gene encoding MK maps to human chromosome 11q11.2.

## REFERENCES

- Li, Y.S., et al. 1990. Cloning and expression of a developmentally regulated protein that induces mitogenic and neurite outgrowth activity. *Science* 250: 1690-1694.
- Tsutsui, J., et al. 1991. A new family of heparin-binding factors: strong conservation of midkine (MK) sequences between the human and the mouse. *Biochem. Biophys. Res. Commun.* 176: 792-797.
- Muramatsu, H., et al. 1994. Localization of heparin-binding, neurite outgrowth and antigenic regions in midkine molecule. *Biochem. Biophys. Res. Commun.* 203: 1131-1139.
- Aridome, K., et al. 1995. Increased midkine gene expression in human gastrointestinal cancers. *Jpn J. Cancer Res.* 86: 655-661.
- Kojima, S., et al. 1995. Midkine enhances fibrinolytic activity of bovine endothelial cells. *J. Biol. Chem.* 270: 9590-9596.

## CHROMOSOMAL LOCATION

Genetic locus: MDK (human) mapping to 11p11.2.

## SOURCE

MK (C-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of MK 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-1396 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## 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.

## APPLICATIONS

MK (C-18) is recommended for detection of precursor and mature MK and 60S ribosomal proteins L29 and L23a of 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).

MK (C-18) is also recommended for detection of precursor and mature MK and 60S ribosomal proteins L29 and L23a in additional species, including canine and porcine.

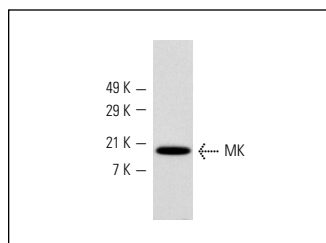
Suitable for use as control antibody for MK siRNA (h): sc-39711, MK shRNA Plasmid (h): sc-39711-SH and MK shRNA (h) Lentiviral Particles: sc-39711-V.

Molecular Weight of MK: 13 kDa.

## 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



MK (C-18): sc-1396. Western blot analysis of human recombinant MK.

## SELECT PRODUCT CITATIONS

- Sandra, F., et al. 2004. Midkine induced growth of ameloblastoma through MAPK and Akt pathways. *Oral Oncol.* 40: 274-280.



Try **MK (A-9): sc-46701**, our highly recommended monoclonal alternative to MK (C-18).