SANTA CRUZ BIOTECHNOLOGY, INC.

MK (M-18): sc-1398

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 five 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

1. 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.
2. 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.
3. Muramatsu, H., et al. 1994. Localization of heparin-binding, neurite outgrowth and antigenic regions in midkine molecule. Biochem. Biophys. Res. Commun. 203: 1131-1139.
4. Aridome, K., et al. 1995. Increased midkine gene expression in human gastrointestinal cancers. Jpn. J. Cancer Res. 86: 655-661.
5. Kojima, S., et al. 1995. Midkine enhances fibrinolytic activity of bovine endothelial cells. J. Biol. Chem. 270: 9590-9596.
6. Kojima, S., et al. 1995. Midkine is a heat and acid stable polypeptide capable of enhancing plasminogen activator activity and neurite outgrowth extension. Biochem. Biophys. Res. Commun. 216: 574-581.
7. Ahmed, K.M., et al. 2000. Genetic variations of the midkine (MK) gene in human sporadic colorectal and gastric cancers. Int. J. Mol. Med. 6: 281-287.

CHROMOSOMAL LOCATION

Genetic locus: MDK (human) mapping to 11p11.2; Mdk (mouse) mapping to 2 E1.

SOURCE

MK (M-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of MK of mouse 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-1398 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

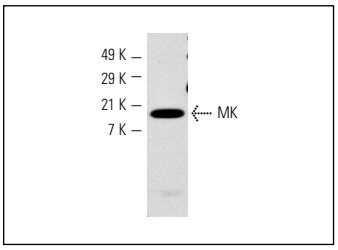
APPLICATIONS

MK (M-18) is recommended for detection of precursor and mature midkine 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).

Suitable for use as control antibody for MK siRNA (h): sc-39711, MK siRNA (m): sc-39712, MK shRNA Plasmid (h): sc-39711-SH, MK shRNA Plasmid (m): sc-39712-SH, MK shRNA (h) Lentiviral Particles: sc-39711-V and MK shRNA (m) Lentiviral Particles: sc-39712-V.

Molecular Weight of MK: 13 kDa.

DATA



MK (M-18): sc-1398. Western blot analysis of human recombinant MK.

SELECT PRODUCT CITATIONS

1. Qiu, L., et al. 2004. Midkine promotes selective expansion of the nephrogenic mesenchyme during kidney organogenesis. Organogenesis 1: 14-21.
2. Yuki, T., et al. 2006. Increased expression of midkine in the rat colon during healing of experimental colitis. Am. J. Physiol. Gastrointest. Liver Physiol. 291: 735-743.
3. Fukui, S., et al. 2008. Therapeutic effect of midkine on cardiac remodeling in infarcted rat hearts. Ann. Thorac. Surg. 85: 562-570.

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.

MONOS Satisfaction Guaranteed

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