SANTA CRUZ BIOTECHNOLOGY, INC.

ChM-1 (P-17): sc-34276

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

ChM-1 is a cartilage-specific matrix glycoprotein that stimulates the growth of chondrocytes. ChM-1 inhibits angiogenesis by disrupting the tube formation of endothelial cells and thus is responsible for the avascular nature of cartilage. ChM-1 is strongly expressed by the proliferating and hypertrophic zones in the epiphyseal plate of long bones. ChM-1 accumulates in the inter-territorial matrix around the lacunae. During development, downregulation of ChM-1 permits angiogenesis and ultimately bone formation on the cartilage template. ChM-1 expression is downregulated in the presence of several growth factors including TGFβ2, FGF2 and PTHLH. ChM-1 expression may also play a role in the hypovascularity and chondroid formation of pleomorphic adenomas. The gene encoding human ChM-1 maps to chromosome 13q14.3.

REFERENCES

1. Hiraki, Y., Tanaka, H., Inoue, H., Kondo, J., Kamizono, A. and Suzuki, F. 1991. Molecular cloning of a new class of cartilage-specific matrix, chondromodulin-I, which stimulates growth of cultured chondrocytes. Biochem. Biophys. Res. Commun. 175: 971-977.
2. Hiraki, Y., Kono, T., Sato, M., Shukunami, C. and Kondo, J. 1997. Inhibition of DNA synthesis and tube morphogenesis of cultured vascular endothelial cells by chondromodulin-I. FEBS Lett. 415: 321-324.
3. Hiraki, Y., Inoue, H., Iyama, K., Kamizono, A., Ochiai, M., Shukunami, C., Iijima, S., Suzuki, F. and Kondo, J. 1997. Identification of chondromodulin I as a novel endothelial cell growth inhibitor. Purification and its localization in the avascular zone of epiphyseal cartilage. J. Biol. Chem. 272: 32419-32426.
4. Shukunami, C. and Hiraki, Y. 1998. Expression of cartilage-specific functional matrix chondromodulin-I mRNA in rabbit growth plate chondrocytes and its responsiveness to growth stimuli *in vitro*. Biochem. Biophys. Res. Commun. 249: 885-890.
5. Shukunami, C., Iyama, K., Inoue, H. and Hiraki, Y. 1999. Spatiotemporal pattern of the mouse chondromodulin-I gene expression and its regulatory role in vascular invasion into cartilage during endochondral bone formation. Int. J. Dev. Biol. 43: 39-49.
6. Yanagihara, I., Yamagata, M., Sakai, N., Shukunami, C., Kurahashi, H., Yamazaki, M., Michigami, T., Hiraki, Y. and Ozono, K. 2000. Genomic organization of the human chondromodulin-1 gene containing a promoter region that confers the expression of reporter gene in chondrogenic ATDC5 cells. J. Bone Miner. Res. 15: 421-429.
7. Kusafuka, K., Hiraki, Y., Shukunami, C., Yamaguchi, A., Kayano, T. and Takemura, T. 2001. Cartilage-specific matrix protein chondromodulin-I is associated with chondroid formation in salivary pleomorphic adenomas: immunohistochemical analysis. Am. J. Pathol. 158: 1465-1472.

CHROMOSOMAL LOCATION

Genetic locus: LECT1 (human) mapping to 13q14.3; Lect1 (mouse) mapping to 14 D3.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

SOURCE

ChM-1 (P-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of ChM-1 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-34276 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ChM-1 (P-17) is recommended for detection of ChM-1 of human and, to a lesser extent, mouse and rat 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).

ChM-1 (P-17) is also recommended for detection of ChM-1 in additional species, including canine.

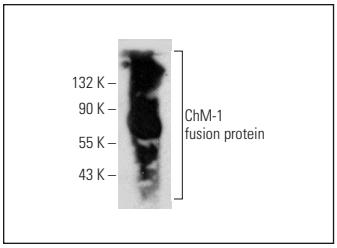
Suitable for use as control antibody for ChM-1 siRNA (h): sc-43279, ChM-1 siRNA (m): sc-43280, ChM-1 shRNA Plasmid (h): sc-43279-SH, ChM-1 shRNA Plasmid (m): sc-43280-SH, ChM-1 shRNA (h) Lentiviral Particles: sc-43279-V and ChM-1 shRNA (m) Lentiviral Particles: sc-43280-V.

Molecular Weight of ChM-1 precursor: 37 kDa.

Molecular Weight of secreted ChM-1: 25 kDa.

Positive Controls: U-2 OS cell lysate: sc-2295.

DATA



ChM-1 (P-17): sc-34276. Western blot analysis of human recombinant ChM-1 fusion protein.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

MONOS Satisfaction Guaranteed

Try **ChM-1 (H-10): sc-365693**, our highly recommended monoclonal alternative to ChM-1 (P-17).