

ChM-1 (E-12): sc-34277

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 TGF β 2, 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

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- Hiraki, Y., et al. 1997. Inhibition of DNA synthesis and tube morphogenesis of cultured vascular endothelial cells by chondromodulin-I. *FEBS Lett.* 415: 321-324.
- Hiraki, Y., et al. 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.
- 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.
- Shukunami, C., et al. 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.
- Yanagihara, I., et al. 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.
- Kusafuka, K., et al. 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 (mouse) mapping to 14 D3.

SOURCE

ChM-1 (E-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of ChM-1 of mouse origin.

RESEARCH USE

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

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-34277 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ChM-1 (E-12) is recommended for detection of ChM-1 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 ChM-1 siRNA (m): sc-43280, ChM-1 shRNA Plasmid (m): sc-43280-SH 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.

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) 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.

SELECT PRODUCT CITATIONS

- Sakamoto, J., et al. 2009. Immobilization-induced cartilage degeneration mediated through expression of hypoxia-inducible factor-1 α , vascular endothelial growth factor, and chondromodulin-I. *Connect. Tissue Res.* 50: 37-45.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

MONOS
Satisfaction
Guaranteed

Try **ChM-1 (H-10): sc-365693**, our highly recommended monoclonal alternative to ChM-1 (E-12).