

COL9A1 (Q-19): sc-46075

BACKGROUND

The Collagen Type IX protein (also known as Collagen $\alpha 1$ Type IX) is encoded by the COL9A1 gene which possesses two promoter regions and codes for both a long chain Collagen Type IX protein expressed in the cartilage, and a shorter Collagen Type IX protein expressed in the cornea and vitreous. Collagen Type IX forms a heterotrimer with Collagen $\alpha 2$ Type IX and Collagen $\alpha 3$ Type IX. When it is expressed in hyaline cartilage, Collagen Type IX possesses a large N-terminal globular domain (NC4). The COL9A1 gene is also expressed in the human inner ear, and disruption of this gene in mice results in hearing loss, indicating the role of Collagen Type IX in hearing. Mutations in the COL9A1 gene are associated with multiple epiphyseal dysplasia (MED), a chondrodysplasia, in humans. Collagen Type IX is often co-localized with Collagen Type II, and may play a role in the interaction of fibrils between Collagen Type II and Collagen Type IX.

REFERENCES

1. McCormick, D., et al. 1987. Structure of the glycosaminoglycan domain in the Collagen Type IX-proteoglycan. *Proc. Natl. Acad. Sci. USA* 84: 4044-4048.
2. Muragaki, Y., et al. 1990. The complete primary structure of two distinct forms of human $\alpha 1$ (IX) Collagen chains. *Eur. J. Biochem.* 192: 703-708.
3. Warman, M.L., et al. 1993. Physical and linkage mapping of the human and murine genes for the $\alpha 1$ chain of Collagen Type IX (COL9A1). *Genomics* 17: 694-698.
4. Fassler, R., et al. 1994. Mice lacking $\alpha 1$ (IX) Collagen develop noninflammatory degenerative joint disease. *Proc. Natl. Acad. Sci. USA* 91: 5070-5074.
5. Czarny-Ratajczak, M., et al. 2001. A mutation in COL9A1 causes multiple epiphyseal dysplasia: further evidence for locus heterogeneity. *Am. J. Hum. Genet.* 69: 969-980.
6. Zhang, P., et al. 2003. Regulation of human COL9A1 gene expression. Activation of the proximal promoter region by Sox-9. *J. Biol. Chem.* 278: 117-123.
7. Asamura, K., et al. 2005. Collagen Type IX is crucial for normal hearing. *Neuroscience* 132: 493-500.

CHROMOSOMAL LOCATION

Genetic locus: COL9A1 (human) mapping to 6q13; Col9a1 (mouse) mapping to 1 A5.

SOURCE

COL9A1 (Q-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Collagen Type IX of human origin.

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-46075 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

COL9A1 (Q-19) is recommended for detection of Collagen Type IX of human and, to a lesser extent, 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).

COL9A1 (Q-19) is also recommended for detection of Collagen Type IX in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for COL9A1 siRNA (h): sc-45635, COL9A1 siRNA (m): sc-45636, COL9A1 shRNA Plasmid (h): sc-45635-SH, COL9A1 shRNA Plasmid (m): sc-45636-SH, COL9A1 shRNA (h) Lentiviral Particles: sc-45635-V and COL9A1 shRNA (m) Lentiviral Particles: sc-45636-V.

Molecular Weight of COL9A1: 92 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.

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.

PROTOCOLS

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

MONOS
Satisfaction
Guaranteed

Try **COL9A1 (H-7): sc-376969**, our highly recommended monoclonal alternative to COL9A1 (Q-19).