

COL8A2 (G-20): sc-82841

BACKGROUND

COL8A2 (collagen $\alpha 2$ (VIII) chain), also known as endothelial collagen, is a 703 amino acid secreted protein. COL8A2 is a major component of the Descemet membrane (basement membrane) of corneal endothelial cells. COL8A2 can form homodimers as well as heterodimers with COL8A1. Defects in COL8A2 are a cause for posterior polymorphous corneal dystrophy (PPCD) and Fuchs endothelial corneal dystrophy (FECD), both being disorders with visual impairment occurring in adulthood. COL8A2 is also the cause of posterior polymorphous corneal dystrophy 2 (PPCD2), a rare familial disorder that occurs from birth onwards.

REFERENCES

1. Muragaki, Y., Jacenko, O., Apte, S., Mattei, M.G., Ninomiya, Y. and Olsen, B.R. 1991. The $\alpha 2$ (VIII) collagen gene. A novel member of the short chain collagen family located on the human chromosome 1. *J. Biol. Chem.* 266: 7721-7727.
2. Biswas, S., Munier, F.L., Yardley, J., Hart-Holden, N., Perveen, R., Cousin, P., Sutphin, J.E., Noble, B., Batterbury, M., Kielty, C., Hackett, A., Bonshek, R., Ridgway, A., McLeod, D., Sheffield, V.C., Stone, E.M., Schorderet, D.F. and Black, G.C. 2001. Missense mutations in COL8A2, the gene encoding the $\alpha 2$ chain of type VIII collagen, cause two forms of corneal endothelial dystrophy. *Hum. Mol. Genet.* 10: 2415-2423.
3. Gottsch, J.D., Sundin, O.H., Liu, S.H., Jun, A.S., Broman, K.W., Stark, W.J., Vito, E.C., Narang, A.K., Thompson, J.M. and Magovern, M. 2005. Inheritance of a novel COL8A2 mutation defines a distinct early-onset subtype of Fuchs corneal dystrophy. *Invest. Ophthalmol. Vis. Sci.* 46: 1934-1939.
4. Adiguzel, E., Hou, G., Mulholland, D., Hopfer, U., Fukai, N., Olsen, B. and Bendeck, M. 2006. Migration and growth are attenuated in vascular smooth muscle cells with type VIII collagen-null alleles. *Arterioscler. Thromb. Vasc. Biol.* 26: 56-61.
5. Turner, N.J., Murphy, M.O., Kielty, C.M., Shuttleworth, C.A., Black, R.A., Humphries, M.J., Walker, M.G. and Canfield, A.E. 2006. $\alpha 2$ (VIII) collagen substrata enhance endothelial cell retention under acute shear stress flow via an $\alpha 2\beta 1$ integrin-dependent mechanism: an *in vitro* and *in vivo* study. *Circulation* 114: 820-829.
6. Valleix, S., Nedelec, B., Rigaudiere, F., Dighiero, P., Pouliquen, Y., Renard, G., Le Gargasson, J.F. and Delpech, M. 2006. H244R VSX1 is associated with selective cone ON bipolar cell dysfunction and macular degeneration in a PPCD family. *Invest. Ophthalmol. Vis. Sci.* 47: 48-54.

CHROMOSOMAL LOCATION

Genetic locus: COL8A2 (human) mapping to 1p34.3; Col8a2 (mouse) mapping to 4 D2.2.

SOURCE

COL8A2 (G-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Collagen $\alpha 2$ type VIII 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-82841 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

COL8A2 (G-20) is recommended for detection of Collagen $\alpha 2$ type VIII of mouse, rat and human 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); non cross-reactive with family members Collagen $\alpha 2$ type I or Collagen $\alpha 2$ type XI.

COL8A2 (G-20) is also recommended for detection of Collagen $\alpha 2$ type VIII in additional species, including porcine.

Suitable for use as control antibody for COL8A2 siRNA (h): sc-72951, COL8A2 siRNA (m): sc-72952, COL8A2 shRNA Plasmid (h): sc-72951-SH, COL8A2 shRNA Plasmid (m): sc-72952-SH, COL8A2 shRNA (h) Lentiviral Particles: sc-72951-V and COL8A2 shRNA (m) Lentiviral Particles: sc-72952-V.

Molecular Weight of COL8A2: 67 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.



Try **COL8A2 (1F4): sc-293350**, our highly recommended monoclonal alternative to COL8A2 (G-20).