SANTA CRUZ BIOTECHNOLOGY, INC.

# COL11A1 (S-11): sc-74372

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

Collagen Type XI is an 1806 amino acid protein belonging to the fibrillar collagen family. Collagen Type XI is thought to play an important role in fibrillogenesis by controlling lateral growth of collagen II fibrils. This protein forms trimers composed of three different chains: α 1(XI), α 2(XI), and α 3(XI). α 3(XI) is a posttranslational modification of α 1(II). α 1(V) can also be found instead of α 3(XI). Collagen Type XI has three named isoforms (A,B,C) and additional isoforms seem to exist, stemming from alternative usage of exon IIA or exon IIB. Transcripts containing exon IIA or IIB are present in cartilage, but exon IIB is preferentially utilized in transcripts from tendon. Collagen Type XI contains a single collagen binding TSP N-terminal (TSPN) domain. Collagen Type XI is expressed in cartilage, placenta and some tumor or virally transformed cell lines. Isoform expression can be tissue specific. Defects in the COL11A gene are the cause of Stickler syndrome type 2 (STL2), or beaded vitreous type, due to the presence of irregularly thickened fiber bundles throughout vitreous cavity. Stickler syndrome (hereditary progressive arthro-ophthalmopathy) is an autosomal dominant disorder characterized by progressive myopia beginning in the first decade of life, vitreo-retinal degeneration, retinal detachment, cleft palate, midfacial hypoplasia, osteoarthritis and sensorineural hearing loss. Defects in COL11A are also the cause of Marshall syndrome, a disorder similar to Stickler syndrome.

## REFERENCES


1. Bernard, M., et al. 1988. Cloning and sequencing of pro-α1 (XI) collagen cDNA demonstrates that type XI belongs to the fibrillar class of collagens and reveals that the expression of the gene is not restricted to cartilagenous tissue. J. Biol. Chem. 263: 17159-17166.
2. Yoshioka, H. and Ramirez, F. 1990. Pro-α1 (XI) collagen. Structure of the amino-terminal propeptide and expression of the gene in tumor cell lines. J. Biol. Chem. 265: 6423-6426.
3. Zhidkova, N.I., et al. 1995. Alternative mRNA processing occurs in the variable region of the pro-α1 (XI) and pro-α2 (XI) collagen chains. J. Biol. Chem. 270: 9486-9493.
4. Richards, A.J., et al. 1997. A family with Stickler syndrome type 2 has a mutation in the COL11A1 gene resulting in the substitution of Glycine 97 by valine in α1 (XI) collagen. Hum. Mol. Genet. 5: 1339-1343.
5. Annunen, S., et al. 2000. Splicing mutations of 54 bp exons in the COL11A1 gene cause Marshall syndrome, but other mutations cause overlapping Marshall/Stickler phenotypes. Am. J. Hum. Genet. 65: 974-983.
6. Warner, L.R., et al. 2007. Expression, purification, and refolding of recombinant collagen α1 (XI) amino-terminal domain splice variants. Protein Expr. Purif. 52: 403-409.
7. Markova, T.G. 2007. Genetic characteristics of hearing disorders in changes in genes responsible for collagen synthesis. Vestn. Otorinolaringol. 3: 17-21.
8. Fernandes, R.J., et al. 2007. Collagen XI chain misassembly in cartilage of the chondrodysplasia (cho) mouse. Matrix Biol. 26: 597-603.


## CHROMOSOMAL LOCATION

Genetic locus: COL11A1 (human) mapping to 1p21.1; Col11a1 (mouse) mapping to 3 F3.

## SOURCE

COL11A1 (S-11) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Collagen Type XI 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-74372 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

COL11A1 (S-11) is recommended for detection of Collagen Type XI 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).

Suitable for use as control antibody for COL11A1 siRNA (h): sc-72956, COL11A1 siRNA (m): sc-72957, COL11A1 shRNA Plasmid (h): sc-72956-SH, COL11A1 shRNA Plasmid (m): sc-72957-SH, COL11A1 shRNA (h) Lentiviral Particles: sc-72956-V and COL11A1 shRNA (m) Lentiviral Particles: sc-72957-V.

Molecular Weight of COL11A1: 181 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.