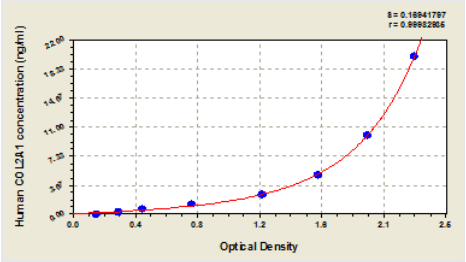
Collagen, Type II, Alpha 1 (COL2A1) ELISA Kit for Human

PRODUCT OVERVIEW

Product Name	collagen, type II, alpha 1 (COL2A1), ELISA Kit
Full Product Name	Human Collagen alpha-1 (II) chain, COL2A1 ELISA Kit
Product Gene Name	COL2A1 elisa kit
Product Synonym Names	Human Collagen alpha-1 (II) chain (COL2A1) ELISA kit; ANFH; AOM; COL11A3; MGC131516; SEDC; cartilage collagen; chondrocalcin; collagen II; alpha-1 polypeptide; collagen; type II; alpha 1
Species Reactivity	Human
Assay Type	Sandwich
Samples	Serum, plasma, tissue homogenates, Cell lysates
Detection Range	0.312 ng/ml - 20 ng/ml.
Sensitivity	The minimum detectable dose of human COL2A1 is typically less than 0.078 ng/ml. The sensitivity of this assay, or Lower Limit of Detection (LLD) was defined as the lowest protein concentration that could be differentiated from zero. It was determined the mean O.D value of 20 replicates of the zero standard added by their three standard deviations.
Specificity	This assay has high sensitivity and excellent specificity for detection of human COL2A1. No significant cross-reactivity or interference between human COL2A1 and analogues was observed.
Preparation and Storage	Unopened test kits should be stored at 2 to 8 degree C upon receipt. Please refer to pdf manual for further storage instructions.
Inter-assay Precision	Inter-assay Precision (Precision between assays): CV%<10%. Three samples of known concentration were tested in twenty assays to assess.
Intra-assay Precision	Intra-assay Precision (Precision within an assay): CV%<8%. Three samples of known concentration were tested twenty times on one plate to assess.
Molecular Weight	141,785 Da
OMIM	609508
3D Structure	ModBase 3D Structure for P02458
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Related Product Information for COL2A1 elisa kit	**Principle of the assay:** This assay employs the quantitative sandwich enzyme immunoassay technique. Antibody specific for COL2A1 has been pre-coated onto a microplate. Standards and samples are pipetted into the wells and any COL2A1 present is bound by the immobilized antibody. After removing any unbound substances, a biotin-conjugated antibody specific for COL2A1 is added to the wells. After washing, avidin conjugated Horseradish Peroxidase (HRP) is added to the wells. Following a wash to remove any unbound avidin-enzyme reagent, a substrate solution is added to the wells and color develops in proportion to the amount of COL2A1 bound in the initial step. The color development is stopped and the intensity of the color is measured.
Other Notes	Small volumes of COL2A1 elisa kit vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.

Searchable Terms for COL2A1 purchase	MBS927010 is a ready-to-use microwell, strip plate ELISA (enzyme-linked immunosorbent assay) Kit for analyzing the presence of the collagen, type II, alpha 1 (COL2A1) ELISA Kit target analytes in biological samples. The concentration gradients of the kit standards or positive controls render a theoretical kit detection range in biological research samples containing COL2A1. The ELISA analytical biochemical technique of the MBS927010 kit is based on COL2A1 antibody-COL2A1 antigen interactions (immunosorbency) and an HRP colorimetric detection system to detect COL2A1 antigen targets in samples. The ELISA Kit is designed to detect native, not recombinant, COL2A1. Appropriate sample types may include undiluted body fluids and/or tissue homogenates, secretions. Quality control assays assessing reproducibility identified the intra-assay CV (%) and inter-assay CV(%).



Typical Testing Data/Standard Curve (for reference only) of COL2A1 elisa kit

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for COL2A1. It may not necessarily be applicable to this product.

NCBI GI #	111118976
NCBI GeneID	1280
NCBI Accession #	NP_001835.3
UniProt Primary Accession #	P02458
UniProt Secondary Accession #	Q12985; Q14009; Q14044; Q14045; Q14046; Q14047; Q14056; Q14058; Q16672; Q1JQ82; A6NGA0
UniProt Related Accession #	P02458
GenBank Nucleotide #	NM_001844.4
NCBI Official Full Name	collagen alpha-1(II) chain isoform 1
NCBI Official Synonym Full Names	collagen, type II, alpha 1
NCBI Official Symbol	COL2A1
NCBI Official Synonym Symbols	AOM; ANFH; SEDC; STL1; COL11A3
UniProt Protein Name	Collagen alpha-1(II) chain
UniProt Synonym Protein Names	Alpha-1 type II collagenCleaved into the following 2 chains:Collagen alpha-1(II) chain; Chondrocalcin
UniProt Gene Name	COL2A1
UniProt Entry Name	CO2A1_HUMAN
NCBI Protein Information	collagen alpha-1(II) chain; collagen alpha-1(II) chain; chondrocalcin; cartilage collagen; alpha-1 type II collagen; collagen II, alpha-1 polypeptide; arthroophthalmopathy, progressive (Stickler syndrome)
NCBI Summary for COL2A1	This gene encodes the alpha-1 chain of type II collagen, a fibrillar collagen found in cartilage and the vitreous humor of the eye. Mutations in this gene are associated with achondrogenesis, chondrodysplasia, early onset familial osteoarthritis, SED congenita, Langer-Saldino achondrogenesis, Kniest dysplasia, Stickler syndrome type I, and spondyloepimetaphyseal dysplasia Strudwick type. In addition, defects in processing chondrocalcin, a calcium binding protein that is the C-propeptide of this collagen molecule, are also associated with chondrodysplasia. There are two transcripts identified for this gene. [provided by RefSeq, Jul 2008]

UniProt Comments for COL2A1	COL2A1: the alpha-1 chain of type II collagen, an extra-cellular matrix protein found in cartilage and the vitreous humor of the eye. It is essential for the normal embryonic development of the skeleton, for linear growth and for the ability of cartilage to resist compressive forces. Chondrocalcin is the calcium binding C-propeptide of this collagen molecule. Defects in this protein are associated with achondrogenesis, chondrodysplasia, early onset familial osteoarthritis, SED congenita, Langer-Saldino achondrogenesis, Kniest dysplasia, Stickler syndrome type I, and spondyloepimetaphyseal dysplasia Strudwick type. There are two transcripts identified for this gene. Belongs to the fibrillar collagen family. 3 isoforms of the human protein are produced by alternative splicing. Protein type: Secreted, signal peptide; Secreted; Extracellular matrix Chromosomal Location of Human Ortholog: 12q13.11 Cellular Component: extracellular matrix; extracellular space; endoplasmic reticulum lumen; collagen type II; extracellular region; basement membrane Molecular Function: identical protein binding; metal ion binding; platelet-derived growth factor binding; extracellular matrix structural constituent conferring tensile strength Biological Process: heart morphogenesis; axon guidance; proteoglycan metabolic process; inner ear morphogenesis; extracellular matrix organization and biogenesis; collagen fibril organization; central nervous system development; palate development; notochord development; extracellular matrix disassembly; limb bud formation; collagen catabolic process; sensory perception of sound; visual perception; regulation of gene expression; cartilage development; tissue homeostasis; chondrocyte differentiation; skeletal development; endochondral ossification; cartilage condensation Disease: Achondrogenesis, Type Ii; Kniest Dysplasia; Epiphyseal Dysplasia, Multiple, With Myopia And Conductive Deafness; Spondyloperipheral Dysplasia; Legg-calve-perthes Disease; Osteoarthritis With Mild Chondrodysplasia; Stickler Syndrome, Type I; Czech Dysplasia; Platyspondylic Lethal Skeletal Dysplasia, Torrance Type; Otospondylomegaepiphyseal Dysplasia; Spondyloepimetaphyseal Dysplasia, Strudwick Type; Avascular Necrosis Of Femoral Head, Primary; Spondyloepiphyseal Dysplasia Congenita; Stickler Syndrome, Type I, Nonsyndromic Ocular
Research Articles on COL2A1	**1.** COL2A1 mutation R275C regularly leads to symmetric spondyloarthropathy,symptoms gradually developing during puberty.
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