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Product datasheet

Mouse Pro-Collagen I alpha 1 ELISA Kit, Fluorescent ab229425

Recombinant CatchPoint SimpleStep ELISA

3 References 5 Images

Overview

Product name Mouse Pro-Collagen I alpha 1 ELISA Kit, Fluorescent

Detection method Fluorescent

Precision

Intra-assay

Sample	n	Mean	SD	CV%
8				2.4%

Inter-assay

Sample	n	Mean	SD	CV%
3				5.6%

Sample type Serum, Cell culture extracts, Tissue Extracts, Hep Plasma, EDTA Plasma, Cit plasma

Assay type Sandwich (quantitative)

Sensitivity 2.6 pg/ml

Range 3.91 pg/ml - 16000 pg/ml

Recovery

Sample specific recovery

Sample type	Average %	Range
Serum	106	102% - 109%
Hep Plasma	111	104% - 115%
EDTA Plasma	109	102% - 116%
Cit plasma	115	113% - 116%

Assay time 1h 30m

Assay duration One step assay

Species reactivity

Reacts with: Mouse
Does not react with: Cow

Product overview

Pro-Collagen I alpha 1 *in vitro* CatchPoint SimpleStep ELISA (Enzyme-Linked Immunosorbent Assay) kit is designed for the quantitative measurement of Pro-Collagen I alpha 1 protein in mouse serum, plasma, and cell and tissue extract samples.

This CatchPoint SimpleStep ELISA kit has been **optimized for Molecular Devices Microplate Readers**. Click **here** for a list of recommended Microplate Readers.
If using a Molecular Devices' plate reader supported by SoftMax® Pro software, a preconfigured protocol for these CatchPoint SimpleStep ELISA Kits is available with all the protocol and analysis settings at **www.softmaxpro.org**.

The CatchPoint SimpleStep ELISA employs an affinity tag labeled capture antibody and a reporter conjugated detector antibody which immunocapture the sample analyte in solution. This entire complex (capture antibody/analyte/detector antibody) is in turn immobilized via immunoaffinity of an anti-tag antibody coating the well. To perform the assay, samples or standards are added to the wells, followed by the antibody mix. After incubation, the wells are washed to remove unbound material. CatchPoint HRP Development Solution containing the Stoplight Red Substrate is added. During incubation, the substrate is catalyzed by HRP generating a fluorescent product. Signal is generated proportionally to the amount of bound analyte and the intensity is measured in a fluorescence plater reader at 530/570/590 nm Excitation/Cutoff/Emission.

Notes

Type I collagen is the most abundant structural protein of connective tissues such as skin, bone and tendon. It is synthesized as a pro-collagen molecule that is characterized by a 300 nm triple helical domain flanked by globular N- and C-terminal propeptides. Specifically, mouse Pro-Collagen I alpha 1 consists of a signal peptide (amino acids (aa) 1-22), a propeptide (aa 23-151), the mature chain (aa 152-1207), and another propeptide (aa 1208 – 1453). The non-helical propeptides are removed by procollagen N- and C-proteinase activities so that the mature triple helices can self-assemble into collagen fibrils that provide tensile strength to tissues.

Abcam has not and does not intend to apply for the REACH Authorisation of customers' uses of products that contain European Authorisation list (Annex XIV) substances.
It is the responsibility of our customers to check the necessity of application of REACH Authorisation, and any other relevant authorisations, for their intended uses.

Platform

Pre-coated microplate (12 x 8 well strips)

Properties

Storage instructions

Store at +4°C. Please refer to protocols.

Components	1 x 96 tests
100X Stoplight Red Substrate	1 x 120µl
10X Mouse Pro-Collagen I alpha 1 Capture Antibody	1 x 600µl
10X Mouse Pro-Collagen I alpha 1 Detector Antibody	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml

Components	1 x 96 tests
500X Hydrogen Peroxide (H2O2, 3%)	1 x 50µl
50X Cell Extraction Enhancer Solution (ab193971)	1 x 1ml
5X Cell Extraction Buffer PTR (ab193970)	1 x 10ml
Antibody Diluent 5BR	1 x 6ml
Mouse Pro-Collagen I alpha 1 Lyophilized Recombinant Protein	2 vials
Plate Seals	1 unit
Sample Diluent NS (ab193972)	1 x 50ml
SimpleStep Pre-Coated Black 96-Well Microplate	1 unit
Stoplight Red Substrate Buffer	1 x 12ml

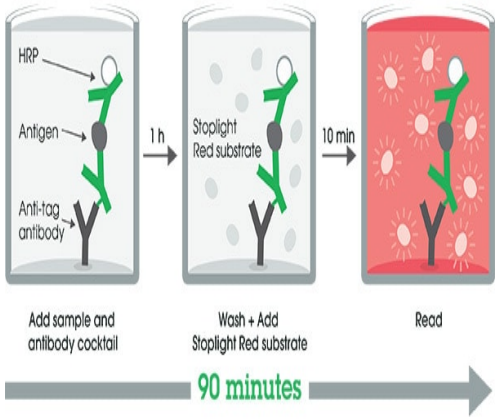
Function Type I collagen is a member of group I collagen (fibrillar forming collagen).

Tissue specificity Forms the fibrils of tendon, ligaments and bones. In bones the fibrils are mineralized with calcium hydroxyapatite.

Involvement in disease Defects in COL1A1 are the cause of Caffey disease (CAFFD) [MIM:114000]; also known as infantile cortical hyperostosis. Caffey disease is characterized by an infantile episode of massive subperiosteal new bone formation that typically involves the diaphyses of the long bones, mandible, and clavicles. The involved bones may also appear inflamed, with painful swelling and systemic fever often accompanying the illness. The bone changes usually begin before 5 months of age and resolve before 2 years of age.
Defects in COL1A1 are a cause of Ehlers-Danlos syndrome type 1 (EDS1) [MIM:130000]; also known as Ehlers-Danlos syndrome gravis. EDS is a connective tissue disorder characterized by hyperextensible skin, atrophic cutaneous scars due to tissue fragility and joint hyperlaxity. EDS1 is the severe form of classic Ehlers-Danlos syndrome.
Defects in COL1A1 are the cause of Ehlers-Danlos syndrome type 7A (EDS7A) [MIM:130060]; also known as autosomal dominant Ehlers-Danlos syndrome type VII. EDS is a connective tissue disorder characterized by hyperextensible skin, atrophic cutaneous scars due to tissue fragility and joint hyperlaxity. EDS7A is marked by bilateral congenital hip dislocation, hyperlaxity of the joints, and recurrent partial dislocations.
Defects in COL1A1 are a cause of osteogenesis imperfecta type 1 (OI1) [MIM:166200]. A dominantly inherited connective tissue disorder characterized by bone fragility and blue sclerae. Osteogenesis imperfecta type 1 is non-deforming with normal height or mild short stature, and no dentinogenesis imperfecta.
Defects in COL1A1 are a cause of osteogenesis imperfecta type 2A (OI2A) [MIM:166210]; also known as osteogenesis imperfecta congenita. A connective tissue disorder characterized by bone fragility, with many perinatal fractures, severe bowing of long bones, undermineralization, and death in the perinatal period due to respiratory insufficiency.
Defects in COL1A1 are a cause of osteogenesis imperfecta type 3 (OI3) [MIM:259420]. A connective tissue disorder characterized by progressively deforming bones, very short stature, a triangular face, severe scoliosis, grayish sclera, and dentinogenesis imperfecta.
Defects in COL1A1 are a cause of osteogenesis imperfecta type 4 (OI4) [MIM:166220]; also known as osteogenesis imperfecta with normal sclerae. A connective tissue disorder

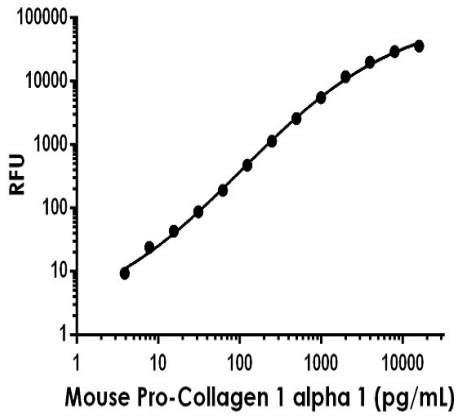
	characterized by moderately short stature, mild to moderate scoliosis, grayish or white sclera and dentinogenesis imperfecta. Genetic variations in COL1A1 are a cause of susceptibility to osteoporosis (OSTEOP) [MIM:166710]; also known as involutional or senile osteoporosis or postmenopausal osteoporosis. Osteoporosis is characterized by reduced bone mass, disruption of bone microarchitecture without alteration in the composition of bone. Osteoporotic bones are more at risk of fracture. Note=A chromosomal aberration involving COL1A1 is found in dermatofibrosarcoma protuberans. Translocation t(17;22)(q22;q13) with PDGF.
Sequence similarities	Belongs to the fibrillar collagen family. Contains 1 fibrillar collagen NC1 domain. Contains 1 VWFC domain.
Post-translational modifications	Proline residues at the third position of the tripeptide repeating unit (G-X-Y) are hydroxylated in some or all of the chains. Proline residues at the second position of the tripeptide repeating unit (G-X-Y) are hydroxylated in some of the chains. O-linked glycan consists of a Glc-Gal disaccharide bound to the oxygen atom of a post-translationally added hydroxyl group.
Cellular localization	Secreted > extracellular space > extracellular matrix.

Images



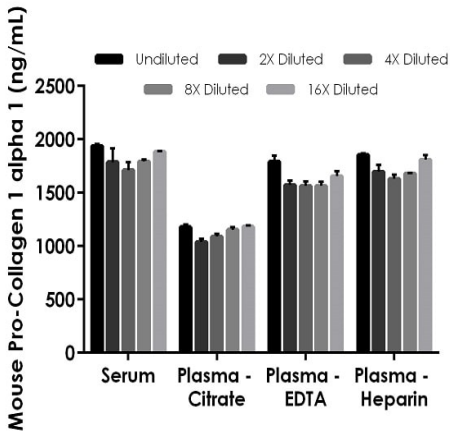
Other - Mouse Pro-Collagen I alpha 1 ELISA Kit, Fluorescent (ab229425)

SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.



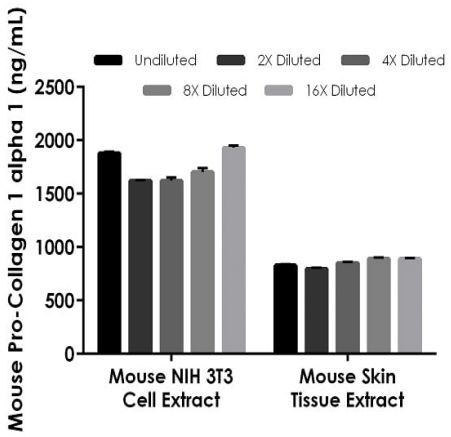
Example of mouse Pro-Collagen I alpha 1 standard curve in Sample Diluent NS

The Pro-Collagen I alpha 1 standard curve was prepared as described in Section 10.



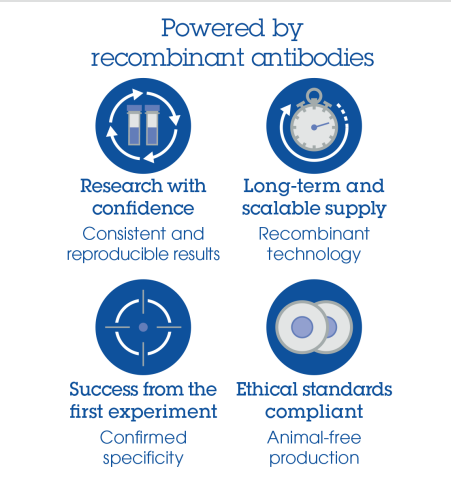
Interpolated concentrations of native Pro-Collagen I alpha 1 in mouse serum and plasma samples.

The concentrations of Pro-Collagen I alpha 1 were measured in duplicates, interpolated from the Pro-Collagen I alpha 1 standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 1:1,200, plasma (citrate) 1:1,200, plasma (EDTA) 1:1,200 and plasma (heparin) 1:1,200. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Pro-Collagen I alpha 1 concentration was determined to be 1,822 ng/mL in serum, 1,128 ng/mL in plasma (citrate), 1,628 ng/mL in plasma (EDTA), and 1,734 ng/mL in plasma (heparin).



Interpolated concentrations of native Pro-Collagen I alpha 1 in mouse NIH 3T3 cell extract

Interpolated concentrations of native Pro-Collagen I alpha 1 in mouse NIH 3T3 cell extract based on a 10 µg/mL extract load and mouse skin tissue extract based on a 20 µg/mL extract load. The concentrations of Pro-Collagen I alpha 1 were measured in duplicate and interpolated from the Pro-Collagen I alpha 1 standard curve and corrected for sample dilution. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Pro-Collagen I alpha 1 concentration was determined to be 1,751 pg/mL in NIH 3T3 cell extract and 851 pg/mL in mouse skin tissue extract.



Sandwich ELISA - Mouse Pro-Collagen I alpha 1 ELISA Kit, Fluorescent (ab229425)

To learn more about the advantages of recombinant antibodies see **here**.

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