**Human Pro-Collagen I alpha 1 ELISA Kit, Fluorescent**

**ab229389**

**Overview**

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

**Detection method**
Fluorescent

**Precision**

<table>
<thead>
<tr>
<th>Sample</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>CV%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum</td>
<td>8</td>
<td></td>
<td></td>
<td>1.8%</td>
</tr>
</tbody>
</table>

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

**Assay type**
Sandwich (quantitative)

**Sensitivity**
3.7 pg/ml

**Range**
3.91 pg/ml - 16000 pg/ml

**Recovery**

<table>
<thead>
<tr>
<th>Sample type</th>
<th>Average %</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum</td>
<td>93</td>
<td>91% - 94%</td>
</tr>
<tr>
<td>Cell culture media</td>
<td>99</td>
<td>97% - 101%</td>
</tr>
<tr>
<td>Hep Plasma</td>
<td>101</td>
<td>94% - 107%</td>
</tr>
<tr>
<td>EDTA Plasma</td>
<td>108</td>
<td>105% - 114%</td>
</tr>
<tr>
<td>Cit plasma</td>
<td>106</td>
<td>102% - 110%</td>
</tr>
</tbody>
</table>
**Assay time**
1h 30m

**Assay duration**
One step assay

**Species reactivity**
- **Reacts with:** Human
- **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 human serum, plasma, cell culture supernatants, 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](http://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 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, human Pro-Collagen I alpha 1 consists of a signal peptide (amino acids (aa) 1-22), a propeptide (aa 23-161), the mature chain (aa 162-1218), and another propeptide (aa 1219 – 1464). 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.

<table>
<thead>
<tr>
<th>Components</th>
<th>1 x 96 tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>100X Stoplight Red Substrate</td>
<td>1 x 120µl</td>
</tr>
<tr>
<td>10X Human Pro-Collagen I alpha 1 Capture Antibody</td>
<td>1 x 600µl</td>
</tr>
</tbody>
</table>
Collagens are highly conserved throughout evolution and are characterised by an uninterrupted "Glycine X Y" triplet repeat that is a necessary part of the triple helical structure. Type I collagen (95 kDa) is found in bone, cornea, skin and tendon. Mutations in the encoding gene are associated with osteogenesis imperfecta, Ehlers Danlos syndrome, and idiopathic osteoporosis. Reciprocal translocations between chromosomes 17 and 22, where this gene and the gene for Platelet-derived growth factor beta are located, are associated with a particular type of skin tumor called dermatofibrosarcoma protuberans, resulting from unregulated expression of the growth factor. Procollagen type 1 is mainly synthesized by osteoblasts and, after cleavage of the N- and C-terminal extension peptides, is utilized for collagen fibril deposition in the osteoid tissue.

**Cellular localization**  
Secreted
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.

Background-subtracted data values (mean +/- SD) are graphed.

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%, plasma (citrate) 1%, plasma (EDTA) 1%, and plasma (heparin) 1%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Pro-Collagen I alpha 1 concentration was determined to be 142.1 ng/mL in serum, 135.9 ng/mL in plasma (citrate), 112.1 ng/mL in plasma (EDTA) and 102.1 ng/mL in plasma (heparin).
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 1.62 ng/mL in IMR-90 extract.

Interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Pro-Collagen I alpha 1 concentration was determined to be 197.3 ng/mL with a range of 113.0 – 417 ng/mL.
To learn more about the advantages of recombinant antibodies see here.

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