Product datasheet

Human C1 inhibitor ELISA Kit ab224883

Overview

**Product name**
Human C1 inhibitor ELISA Kit

**Detection method**
Colorimetric

**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>9</td>
<td></td>
<td></td>
<td>1.9%</td>
</tr>
</tbody>
</table>

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

**Assay type**
Sandwich (quantitative)

**Sensitivity**
10.9 pg/ml

**Range**
31.25 pg/ml - 2000 pg/ml

**Assay time**
1h 30m

**Assay duration**
One step assay

**Recovery**

<table>
<thead>
<tr>
<th>Sample type</th>
<th>Average %</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cell culture supernatant</td>
<td>92</td>
<td>89% - 95%</td>
</tr>
<tr>
<td>Serum</td>
<td>113</td>
<td>111% - 114%</td>
</tr>
<tr>
<td>Hep Plasma</td>
<td>100</td>
<td>92% - 108%</td>
</tr>
<tr>
<td>EDTA Plasma</td>
<td>102</td>
<td>91% - 107%</td>
</tr>
<tr>
<td>Cit plasma</td>
<td>106</td>
<td>101% - 112%</td>
</tr>
</tbody>
</table>
Species reactivity

Reacts with: Human
Does not react with: Cow

Product overview

Human C1 inhibitor ELISA Kit (ab224883) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of C1 inhibitor protein in cell culture supernatant, cit plasma, edta plasma, hep plasma, and serum. It uses our proprietary SimpleStep ELISA® technology. Quantitate Human C1 inhibitor with 10.9 pg/ml sensitivity.

SimpleStep ELISA® technology employs capture antibodies conjugated to an affinity tag that is recognized by the monoclonal antibody used to coat our SimpleStep ELISA® plates. This approach to sandwich ELISA allows the formation of the antibody-analyte sandwich complex in a single step, significantly reducing assay time. See the SimpleStep ELISA® protocol summary in the image section for further details. Our SimpleStep ELISA® technology provides several benefits:

- Single-wash protocol reduces assay time to 90 minutes or less
- High sensitivity, specificity and reproducibility from superior antibodies
- Fully validated in biological samples
- 96-wells plate breakable into 12 x 8 wells strips

A 384-well SimpleStep ELISA® microplate (ab203359) is available to use as an alternative to the 96-well microplate provided with SimpleStep ELISA® kits.

Notes

C1 inhibitor, also known as C1 esterase inhibitor and Serpin G1, is a protease inhibitor belonging to the serpin superfamily, and is encoded by the gene SERPING1. C1 inhibitor is a 478 -amino acid containing protein, and is heavily glycosylated with an approximate 105 kDa molecular mass. The primary function of C1 inhibitor is the inhibition of the classical complement cascade to suppress spontaneous activation by forming an inactive complex with C1r and C1s proteases. In addition, C1 inhibitor also inactivates proteases of the fibrinolytic, clotting, and kinin pathways. The levels of C1 inhibitor in blood fluctuate during inflammation, and deficiencies of C1 inhibitor are associated with hereditary angioedema.

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>10X Wash Buffer PT (ab206977)</td>
<td>1 x 20ml</td>
</tr>
<tr>
<td>50X Cell Extraction Enhancer Solution (ab193971)</td>
<td>1 x 1ml</td>
</tr>
<tr>
<td>5X Cell Extraction Buffer PTR (ab193970)</td>
<td>1 x 10ml</td>
</tr>
<tr>
<td>Antibody Diluent 4BI</td>
<td>1 x 6ml</td>
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</tbody>
</table>
C1 inhibitor functions as a regulator of the activation of the classical complement pathway and of the contact activation system of kinin generation and coagulation. Its primary biologically relevant target proteinases are C1r, C1s, coagulation factors XIa and XIIa, and plasma kallikrein. C1-inhibitor consists of one polypeptide chain and has a molecular mass of 104 kDa.

**Cellular localization**
Secreted

**Relevance**

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.

**Components**

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>10X Human C1 inhibitor Capture Antibody</td>
<td>1 x 600µl</td>
</tr>
<tr>
<td>10X Human C1 inhibitor Detector Antibody</td>
<td>1 x 600µl</td>
</tr>
<tr>
<td>Human C1 inhibitor Lyophilized Recombinant Protein</td>
<td>2 vials</td>
</tr>
<tr>
<td>Plate Seals</td>
<td>1 unit</td>
</tr>
<tr>
<td>Sample Diluent NS (ab193972)</td>
<td>1 x 50ml</td>
</tr>
<tr>
<td>SimpleStep Pre-Coated 96-Well Microplate (ab206978)</td>
<td>1 unit</td>
</tr>
<tr>
<td>Stop Solution</td>
<td>1 x 12ml</td>
</tr>
<tr>
<td>TMB Development Solution</td>
<td>1 x 12ml</td>
</tr>
</tbody>
</table>
Background-subtracted data values (mean +/- SD) are graphed.

The concentrations of C1 inhibitor were measured in duplicates, interpolated from the C1 inhibitor standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 1:4000, plasma (citrate) 1:4000, plasma (EDTA) 1: 4,000, and plasma (heparin) 1:8000. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean C1 inhibitor concentration was determined to be 9,502 ng/mL in serum, 8,496 ng/mL in plasma (citrate), 4,285 ng/mL in plasma (EDTA), and 26,756 ng/mL in plasma (heparin).

HepG2 cells were cultured for 5 days in DMEM media containing 10% FBS and 1% NEAA. The concentrations of C1 inhibitor were measured in duplicate and interpolated from the C1 inhibitor standard curve and corrected for sample dilution. Undiluted samples are 18.75%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean C1 inhibitor concentration was determined to be 1,303 pg/mL.
Serum from ten individual healthy human female donors was measured in duplicate. Interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean C1 inhibitor concentration was determined to be 12,259 pg/mL with a range of 39.7-20,572 pg/mL.

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

Sandwich ELISA - Human C1 inhibitor ELISA Kit (ab224883)

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