**Human CA125 ELISA Kit (MUC16) ab195213**

**Overview**

**Product name**
Human CA125 ELISA Kit (MUC16)

**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>Overall</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Intra-assay</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Inter-assay</strong></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Sample type**
Cell culture supernatant, Saliva, Milk, Urine, Serum, Plasma

**Assay type**
Sandwich (quantitative)

**Sensitivity**
0.07 U/ml

**Range**
1.56 U/ml - 100 U/ml

**Recovery**

<table>
<thead>
<tr>
<th>Sample type</th>
<th>Average %</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cell culture supernatant</td>
<td>115</td>
<td>106% - 123%</td>
</tr>
<tr>
<td>Saliva</td>
<td>117</td>
<td>107% - 130%</td>
</tr>
<tr>
<td>Milk</td>
<td>104</td>
<td>95% - 115%</td>
</tr>
<tr>
<td>Urine</td>
<td>88</td>
<td>78% - 103%</td>
</tr>
<tr>
<td>Serum</td>
<td>91</td>
<td>83% - 104%</td>
</tr>
<tr>
<td>Hep Plasma</td>
<td>116</td>
<td>110% - 121%</td>
</tr>
<tr>
<td>Sample type</td>
<td>Average %</td>
<td>Range</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------</td>
<td>-------------</td>
</tr>
<tr>
<td>EDTA Plasma</td>
<td>88</td>
<td>84% - 90%</td>
</tr>
<tr>
<td>Cit plasma</td>
<td>91</td>
<td>86% - 96%</td>
</tr>
</tbody>
</table>

### Assay time
1h 30m

### Assay duration
One step assay

### Species reactivity
Reacts with: Human

### Product overview
Abcam’s CA125 (MUC16) *in vitro* SimpleStep ELISA® (Enzyme-Linked Immunosorbent Assay) kit is designed for the quantitative measurement of Human serum, plasma, cell culture supernatants, urine, milk, and saliva samples.

The 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. TMB substrate is added and during incubation is catalyzed by HRP, generating blue coloration. This reaction is then stopped by addition of Stop Solution completing any color change from blue to yellow. Signal is generated proportionally to the amount of bound analyte and the intensity is measured at 450 nm. Optionally, instead of the endpoint reading, development of TMB can be recorded kinetically at 600 nm.

### Sensitivity:
- Samples diluted in Sample Diluent 25BS – 0.07 Units/mL
- Samples diluted in Sample Diluent 50BS – 0.071 Units/mL

### Notes
Cancer antigen 125 (CA125, also known as Mucin 16) is a membrane associated cell surface protein containing approximately 22,096 amino acids. CA125 is the largest member of the Mucin family of proteins and is highly o-glycosylated. The hydrophilic nature of mucin proteins gives them the ability to form protective/lubricating gel-like barriers to protect against chemotherapy agents, foreign particles and infectious agents. CA125 is used as a biomarker for ovarian cancer detection, with about 90% of women with advanced ovarian cancer having elevated levels of CA125 present in their blood serum.

### Tested applications
Suitable for: Sandwich ELISA

### Platform
Microplate (12 x 8 well strips)

### Properties

### Storage instructions
Store at +4°C. Please refer to protocols.

### Components

<table>
<thead>
<tr>
<th>Components</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>10X Human CA125 (MUC16) Capture Antibody</td>
<td>1 x 600µl</td>
</tr>
</tbody>
</table>
Function
Thought to provide a protective, lubricating barrier against particles and infectious agents at mucosal surfaces.

Tissue specificity
Expressed in corneal and conjunctival epithelia (at protein level). Overexpressed in ovarian carcinomas and ovarian low malignant potential (LMP) tumors as compared to the expression in normal ovarian tissue and ovarian adenomas.

Sequence similarities
Contains 2 ANK repeats.
Contains 56 SEA domains.

Domain
Composed of three domains, a Ser-, Thr-rich N-terminal domain, a repeated domain containing more than 60 partially conserved tandem repeats of 156 amino acids each (AAs 12061-21862) and a C-terminal transmembrane contain domain with a short cytoplasmic tail.

Post-translational modifications
Heavily O-glycosylated; expresses both type 1 and type 2 core glycans.
Heavily N-glycosylated; expresses primarily high mannose and complex bisecting type N-linked glycans.
May be phosphorylated. Phosphorylation of the intracellular C-terminal domain may induce proteolytic cleavage and the liberation of the extracellular domain into the extracellular space.
May contain numerous disulfide bridges. Association of several molecules of the secreted form may occur through interchain disulfide bridges providing an extraordinarily large gel-like matrix in the extracellular space or in the lumen of secretory ducts.

Cellular localization
Cell membrane. Secreted > extracellular space. May be liberated into the extracellular space following the phosphorylation of the intracellular C-terminus which induces the proteolytic cleavage and liberation of the extracellular domain.

Applications
Our Abpromise guarantee covers the use of ab195213 in the following tested applications.
The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.
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 CA125 standard curve prepared in Sample Diluent 25BS.

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

Non-background subtracted data from duplicate measurements are plotted. CA125 was detectable in HeLa cells culture supernatants (4-days culture), HepG2 and THP1 cell culture supernatants (4-days culture) were loaded as negative controls.

<table>
<thead>
<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sandwich ELISA</td>
<td></td>
<td>Use at an assay dependent concentration.</td>
</tr>
</tbody>
</table>

Images
Duplicate interpolated values of CA125 (mean +/- SD, n = 2) are graphed. Medical histories of individual donors was not known. Measurements of CA125 are known to fluctuate in individual serums due to onset of certain cancers and benign conditions, thus CA125 elevation alone is not reason enough for diagnosis.

Titration of individual normal male, female, and 3 patients diagnosed with ovarian cancer.

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