## Overview

**Product name:** Human E-Cadherin ELISA Kit

**Detection method:** Colorimetric

<table>
<thead>
<tr>
<th>Sample</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>CV%</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCF-7</td>
<td>5</td>
<td></td>
<td></td>
<td>7.6%</td>
</tr>
</tbody>
</table>

**Sample type:** Saliva, Urine, Serum, Cell culture media, Heparin Plasma, EDTA Plasma, Citrate Plasma

**Assay type:** Sandwich (quantitative)

**Sensitivity:** 78 pg/ml

**Range:** 156 pg/ml - 10000 pg/ml

**Recovery**

<table>
<thead>
<tr>
<th>Sample type</th>
<th>Average %</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saliva</td>
<td>93</td>
<td>90% - 96%</td>
</tr>
<tr>
<td>Urine</td>
<td>105</td>
<td>104% - 107%</td>
</tr>
<tr>
<td>Serum</td>
<td>97</td>
<td>92% - 104%</td>
</tr>
<tr>
<td>Cell culture media</td>
<td>100</td>
<td>98% - 103%</td>
</tr>
<tr>
<td>Heparin Plasma</td>
<td>103</td>
<td>92% - 109%</td>
</tr>
<tr>
<td>EDTA Plasma</td>
<td>108</td>
<td>106% - 111%</td>
</tr>
</tbody>
</table>
### Sample type

| Citrate Plasma | 97 | 93% - 98% |

### Assay time

1h 30m

### Assay duration

One step assay

### Species reactivity

Reacts with: Human  
Does not react with: Cow

### Product overview

E-Cadherin in vitro SimpleStep ELISA® (Enzyme-Linked Immunosorbent Assay) kit is designed for the quantitative measurement of E-Cadherin protein in human serum, plasma, cell culture supernatant, urine and saliva.

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.

E-Cadherin is a member of the Cadherin family of calcium-dependent cell adhesion proteins. E-Cadherin is a single-pass transmembrane protein on the plasma membrane. The extracellular portion contains 5 cadherin domains that bind calcium and form homodimeric interactions. E-Cadherin is involved in mechanisms regulating cell-cell adhesions, mobility and proliferation of epithelial cells.

### Tested applications

Suitable for: Sandwich ELISA

### 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 Human E-Cadherin Capture Antibody</td>
<td>1 x 600µl</td>
</tr>
<tr>
<td>10X Human E-Cadherin Detector Antibody</td>
<td>1 x 600µl</td>
</tr>
<tr>
<td>10X Wash Buffer PT (ab206977)</td>
<td>1 x 20ml</td>
</tr>
<tr>
<td>Antibody Diluent 4BI</td>
<td>1 x 6ml</td>
</tr>
<tr>
<td>Human E-Cadherin Lyophilized Recombinant Protein</td>
<td>2 vials</td>
</tr>
</tbody>
</table>
Function

Cadherins are calcium-dependent cell adhesion proteins. They preferentially interact with themselves in a homophilic manner in connecting cells; cadherins may thus contribute to the sorting of heterogeneous cell types. CDH1 is involved in mechanisms regulating cell-cell adhesions, mobility and proliferation of epithelial cells. Has a potent invasive suppressor role. It is a ligand for integrin alpha-E/beta-7.

E-Cad/CTF2 promotes non-amyloidogenic degradation of Abeta precursors. Has a strong inhibitory effect on APP C99 and C83 production.

Tissue specificity

Non-neural epithelial tissues.

Involvement in disease

Defects in CDH1 are the cause of hereditary diffuse gastric cancer (HDGC) [MIM:137215]. An autosomal dominant cancer predisposition syndrome with increased susceptibility to diffuse gastric cancer. Diffuse gastric cancer is a malignant disease characterized by poorly differentiated infiltrating lesions resulting in thickening of the stomach. Malignant tumors start in the stomach, can spread to the esophagus or the small intestine, and can extend through the stomach wall to nearby lymph nodes and organs. It also can metastasize to other parts of the body. Note=Heterozygous germline mutations CDH1 are responsible for familial cases of diffuse gastric cancer. Somatic mutations in the has also been found in patients with sporadic diffuse gastric cancer and lobular breast cancer.

Defects in CDH1 are a cause of susceptibility to endometrial cancer (ENDMC) [MIM:608089].

Defects in CDH1 are a cause of susceptibility to ovarian cancer (OC) [MIM:167000]. Ovarian cancer common malignancy originating from ovarian tissue. Although many histologic types of ovarian neoplasms have been described, epithelial ovarian carcinoma is the most common form. Ovarian cancers are often asymptomatic and the recognized signs and symptoms, even of late-stage disease, are vague. Consequently, most patients are diagnosed with advanced disease.

Sequence similarities

Contains 5 cadherin domains.

Post-translational modifications

During apoptosis or with calcium influx, cleaved by a membrane-bound metalloproteinase (ADAM10), PS1/gamma-secretase and caspase-3 to produce fragments of about 38 kDa (E-CAD/CTF1), 33 kDa (E-CAD/CTF2) and 29 kDa (E-CAD/CTF3), respectively. Processing by the metalloproteinase, induced by calcium influx, causes disruption of cell-cell adhesion and the subsequent release of beta-catenin into the cytoplasm. The residual membrane-tethered cleavage product is rapidly degraded via an intracellular proteolytic pathway. Cleavage by caspase-3 releases the cytoplasmic tail resulting in disintegration of the actin microfilament system. The gamma-secretase-mediated cleavage promotes disassembly of adherens junctions.

Cellular localization

Applications

Our Abpromise guarantee covers the use of ab233611 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

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

Images

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.

Standard curve comparison between Human E-Cadherin SimpleStep ELISA® kit and traditional ELISA kit from leading competitor. SimpleStep ELISA kit shows increased sensitivity.
The E-Cadherin standard curve was prepared as described in Section 10. Raw data values are shown in the table. Background-subtracted data values (mean +/- SD) are graphed.

The concentrations of E-Cadherin were measured in duplicates, interpolated from the E-Cadherin standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 25%, plasma (EDTA) 12%, plasma (citrate) 12%, and plasma (heparin) 12%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean E-Cadherin concentration was determined to be 47 ng/mL in serum, 36 ng/mL in plasma (EDTA), and 38 ng/mL plasma (heparin) and 34 ng/mL in plasma (citrate).

Interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean E-Cadherin concentration was determined to be 52 ng/mL with a range of 10 – 84 ng/mL.
The concentrations of E-Cadherin were measured in duplicate and interpolated from the E-Cadherin standard curve and corrected for sample dilution. Undiluted samples are as follows: MCF-7 cell culture supernatant 100% and urine 1.25%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean E-Cadherin concentration was determined to be 1.9 ng/mL in MCF-7 supernatant and 45 ng/mL in urine.

The concentrations of E-Cadherin were measured in duplicate and interpolated from the E-Cadherin standard curve and corrected for sample dilution. Undiluted samples are as follows: saliva 6.25%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean E-Cadherin concentration was determined to be 5 ng/mL in saliva.

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