Human PSA ELISA Kit ab264615
SimpleStep ELISA

Overview

Product name: Human PSA ELISA Kit
Detection method: Colorimetric

<table>
<thead>
<tr>
<th>Sample type</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>CV%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urine</td>
<td>8</td>
<td></td>
<td></td>
<td>5.9%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sample</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>CV%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urine</td>
<td>3</td>
<td></td>
<td></td>
<td>8.4%</td>
</tr>
</tbody>
</table>

Sample type: Urine, Serum, Hep Plasma, EDTA Plasma, Cit plasma, Fetal Bovine Serum
Assay type: Sandwich (quantitative)
Sensitivity: 8 pg/ml
Range: 39 pg/ml - 2500 pg/ml

Recovery

<table>
<thead>
<tr>
<th>Sample type</th>
<th>Average %</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urine</td>
<td>116</td>
<td>112% - 120%</td>
</tr>
<tr>
<td>Serum</td>
<td>99</td>
<td>95% - 103%</td>
</tr>
<tr>
<td>Hep Plasma</td>
<td>86</td>
<td>85% - 88%</td>
</tr>
<tr>
<td>EDTA Plasma</td>
<td>88</td>
<td>80% - 94%</td>
</tr>
<tr>
<td>Cit plasma</td>
<td>115</td>
<td>108% - 120%</td>
</tr>
<tr>
<td>Fetal Bovine Serum</td>
<td>92</td>
<td>86% - 97%</td>
</tr>
</tbody>
</table>
**Assay time** 1h 30m  
**Assay duration** One step assay  
**Species reactivity** Reacts with: Human  
**Product overview** 
Human PSA SimpleStep ELISA® kit is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of PSA protein in human serum, plasmas, cell culture media, and urine samples. Quantitate Human PSA with 8 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 SimpeStep ELISA® kits.

**Notes** 
Prostate specific antigen (PSA) or also commonly termed tissue Kallikrein-3 (KLK3) is a 34 kD serine protease from the Kallikrein family. PSA has very high expression in the prostate gland, but expression also has been reported in the breast and saliva. PSA functions by hydrolyzing semenogelin-1 leading to the liquefaction of the seminal coagulum. This is essential for the proper release of sperm during ejaculation. The majority (>70%) of PSA is known to form a complex with alpha-1-antichymotrypsin (PSA-ACT) in the blood. The remaining PSA exists as an unbound inactive enzyme known as Free PSA. PSA is best characterized as a clinical biomarker for Prostate Cancer. During prostate cancer progression, excess amounts of PSA are leaked into the blood dramatically elevating both Total and Free PSA levels. This assay detects total PSA levels.

**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 PSA Capture Antibody</td>
<td>1 x 600µl</td>
</tr>
<tr>
<td>10X Human PSA 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 PSA Lyophilized Recombinant Protein</td>
<td>2 vials</td>
</tr>
</tbody>
</table>
Function
Hydrolyzes semenogelin-1 thus leading to the liquefaction of the seminal coagulum.

Sequence similarities
Belongs to the peptidase S1 family. Kallikrein subfamily. Contains 1 peptidase S1 domain.

Cellular localization
Secreted.

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 PSA SimpleStep ELISA kit and traditional ELISA kit from leading competitor. SimpleStep ELISA kit shows increased sensitivity.
The PSA 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 PSA were measured in duplicates, interpolated from the PSA standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 100% and plasma (citrate) 50%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean PSA concentration was determined to be 630 pg/mL in serum, 1,300 pg/mL in plasma (citrate).

The concentrations of PSA were measured in duplicates, interpolated from the PSA standard curves and corrected for sample dilution. Undiluted samples are as follows: male urine 1:200. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean PSA concentration was determined to be 174 ng/mL in male urine.
Serum from eight individual healthy human male donors was measured in duplicate. Interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean PSA concentration was determined to be 826 pg/mL with a range of 234 – 2,201 pg/mL.

Urine from both pooled male and female donors was measured in duplicate at 1:200 dilution. Interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). Female urine was below the lower limit of detection and 174 ng/mL in male urine.

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