# Human Lp-PLA2 ELISA Kit ab235643

## Overview

### Product name
Human Lp-PLA2 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>5</td>
<td></td>
<td></td>
<td>2.5%</td>
</tr>
</tbody>
</table>

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

### Assay type
Sandwich (quantitative)

### Sensitivity
45 pg/ml

### Range
0.16 ng/ml - 10 ng/ml

### Recovery

<table>
<thead>
<tr>
<th>Sample type</th>
<th>Average %</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum</td>
<td>95</td>
<td>93% - 97%</td>
</tr>
<tr>
<td>Cell culture media</td>
<td>101</td>
<td>99% - 102%</td>
</tr>
<tr>
<td>Hep Plasma</td>
<td>96</td>
<td>93% - 97%</td>
</tr>
<tr>
<td>EDTA Plasma</td>
<td>81</td>
<td>72% - 88%</td>
</tr>
<tr>
<td>Cit plasma</td>
<td>98</td>
<td>97% - 100%</td>
</tr>
</tbody>
</table>

### Assay time
1h 30m
Assay duration: One step assay

Species reactivity: Reacts with: Human

Product overview: Lp-PLA2 in vitro SimpleStep ELISA® (Enzyme-Linked Immunosorbent Assay) kit is designed for the quantitative measurement of Lp-PLA2 protein in human serum, plasma, and cell culture supernatant.

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 Development Solution 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.

Lipoprotein-associated phospholipase A2 (Lp-PLA2) is a secreted enzyme that catalyzes the degradation of platelet activating factor (PAF) to inactive forms (lysophosphatidylcholine and oxidized nonesterified fatty acids) by hydrolysis. Lp-PLA2 is produced by mature macrophages and activated platelets and is associated mainly with low density lipoproteins (LDL’s). Circulating Lp-PLA2 may be a predictor of cardiovascular events, and is a risk factor of cardiovascular disease.

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>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>10X Human Lp-PLA2 Capture Antibody</td>
<td>1 x 600µl</td>
</tr>
<tr>
<td>10X Human Lp-PLA2 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 Lp-PLA2 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>
Function
Modulates the action of platelet-activating factor (PAF) by hydrolyzing the sn-2 ester bond to yield the biologically inactive lyso-PAF. Has a specificity for substrates with a short residue at the sn-2 position. It is inactive against long-chain phospholipids.

Tissue specificity
Plasma.

Involvement in disease
Platelet-activating factor acetylhydrolase deficiency
Asthma
Atopic hypersensitivity

Sequence similarities
Belongs to the AB hydrolase superfamily. Lipase family.

Cellular localization
Secreted, extracellular space.

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 Lp-PLA2 SimpleStep ELISA kit and traditional ELISA kit from leading competitor. SimpleStep ELISA kit shows increased sensitivity.
Example of human Lp-PLA2 standard curve in Sample Diluent NS.

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

Interpolated concentrations of native Lp-PLA2 in human serum, plasma and cell culture supernatant samples.

The concentrations of Lp-PLA2 were measured in duplicates, interpolated from the Lp-PLA2 standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 1:50, plasma (citrate) 1:50, plasma (EDTA) 1:50, and plasma (heparin) 1:50. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Lp-PLA2 concentration was determined to be 175 ng/mL in serum, 102 ng/mL in plasma (citrate), 168 ng/mL in plasma (EDTA) and 118 ng/mL in plasma (heparin).

Interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Lp-PLA2 concentration was determined to be 275 ng/mL with a range of 129 – 436 ng/mL.

Serum from ten individual healthy human male donors was measured in duplicate.
The concentrations of Lp-PLA2 were measured in duplicates, interpolated from the Lp-PLA2 standard curves and corrected for sample dilution. Undiluted samples are as follows: Unstimulated 10%, Stimulated 10%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Lp-PLA2 concentration was determined to be 2.1 ng/mL in unstimulated PBMC cell culture supernatant and 9.3 ng/mL in PHA-M Stimulated cell culture supernatant.

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