## Overview

**Product name**
Human Von Willebrand Factor 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>3</td>
<td></td>
<td></td>
<td>3.4%</td>
</tr>
<tr>
<td>Inter-assay</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serum</td>
<td>5</td>
<td></td>
<td></td>
<td>6.4%</td>
</tr>
</tbody>
</table>

**Sample type**
Serum, Hep Plasma, EDTA Plasma, Cit plasma

**Assay type**
Sandwich (quantitative)

**Sensitivity**
0.079 ng/ml

**Range**
0.469 ng/ml - 30 ng/ml

**Recovery**

<table>
<thead>
<tr>
<th>Sample type</th>
<th>Average %</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum</td>
<td>101</td>
<td>94% - 107%</td>
</tr>
<tr>
<td>Cell culture media</td>
<td>88</td>
<td>80% - 95%</td>
</tr>
<tr>
<td>Hep Plasma</td>
<td>95</td>
<td>89% - 102%</td>
</tr>
<tr>
<td>EDTA Plasma</td>
<td>92</td>
<td>86% - 97%</td>
</tr>
<tr>
<td>Cit plasma</td>
<td>98</td>
<td>83% - 118%</td>
</tr>
</tbody>
</table>

**Assay time**
1h 30m
Assay duration
One step assay

Species reactivity
Reacts with: Human, Rhesus monkey
Does not react with: Cow

Product overview
Human Von Willebrand Factor ELISA Kit (ab223864) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of Von Willebrand Factor protein in cit plasma, edta plasma, hep plasma, and serum. It uses our proprietary SimpleStep ELISA® technology. Quantitate Human Von Willebrand Factor with 0.079 ng/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
Von Willebrand Factor is critical in the maintenance of hemostasis, it promotes adhesion of platelets to the sites of vascular injury by forming a molecular bridge between sub-endothelial collagen matrix and platelet-surface receptor complex GPIb-IX-V. Von Willebrand Factor also acts as a chaperone for coagulation factor VIII, delivering it to the site of injury, stabilizing its heterodimeric structure and protecting it from premature clearance from plasma.

Platform
Microplate (12 x 8 well strips)

Properties

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

Components | 1 x 96 tests |
--- | --- |
10X Wash Buffer PT (ab206977) | 1 x 20ml |
Antibody Diluent 5BI | 1 x 6ml |
Human Von Willabrand Factor Capture Antibody (Lyophilized) | 1 vial |
10X Human Von Willabrand Factor Detector Antibody | 1 x 600µl |
Human Von Willabrand Factor Lyophilized Recombinant Protein | 2 vials |
Plate Seals | 1 unit |
Sample Diluent NS (ab193972) | 1 x 50ml |
### Components

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<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

Important in the maintenance of hemostasis, it promotes adhesion of platelets to the sites of vascular injury by forming a molecular bridge between sub-endothelial collagen matrix and platelet-surface receptor complex GPIb-IX-V. Also acts as a chaperone for coagulation factor VIII, delivering it to the site of injury, stabilizing its heterodimeric structure and protecting it from premature clearance from plasma.

### Tissue Specificity

Plasma.

### Involvement in Disease

Defects in VWF are the cause of von Willebrand disease (VWD) [MIM:277480]. VWD defines a group of hemorrhagic disorders in which the von Willebrand factor is either quantitatively or qualitatively abnormal resulting in altered platelet function. Symptoms vary depending on severity and disease type but may include prolonged bleeding time, deficiency of factor VIII and impaired platelet adhesion. Type I von Willebrand disease is the most common form and is characterized by partial quantitative plasmatic deficiency of an otherwise structurally and functionally normal Willebrand factor; type II is associated with a qualitative deficiency and functional anomalies of the Willebrand factor; type III is the most severe form and is characterized by total or near-total absence of Willebrand factor in the plasma and cellular compartments, also leading to a profound deficiency of plasmatic factor VIII.

### Sequence Similarities

Contains 1 CTCK (C-terminal cystine knot-like) domain.
Contains 4 TIL (trypsin inhibitory-like) domains.
Contains 3 VWFA domains.
Contains 3 VWFC domains.
Contains 4 VWFD domains.

### Domain

The von Willebrand antigen 2 is required for multimerization of vWF and for its targeting to storage granules.

### Post-translational Modifications

All cysteine residues are involved in intrachain or interchain disulfide bonds.
N- and O-glycosylated.

### Cellular Localization

Secreted. Secreted > extracellular space > extracellular matrix. Localized to storage granules.

### SimpleStep ELISA Technology

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

The concentrations of Von Willebrand Factor were measured in duplicates, interpolated from the Von Willebrand Factor standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 1:500, plasma (citrate) 1:500, plasma (heparin) 1:500, and plasma (EDTA) 1:500. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Von Willebrand Factor concentration was determined to be 4.226 µg/mL in neat serum, 2.793 µg/mL in neat plasma (citrate), 1.774 µg/mL in neat plasma (heparin), and 2.819 µg/mL in neat plasma (EDTA).

Interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Von Willebrand Factor concentration was determined to be 5.280 µg/mL with a range of 2.088 – 11.35 µg/mL.

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

Our Abpromise to you: Quality guaranteed and expert technical support

- Replacement or refund for products not performing as stated on the datasheet
• Valid for 12 months from date of delivery
• Response to your inquiry within 24 hours

• We provide support in Chinese, English, French, German, Japanese and Spanish
• Extensive multi-media technical resources to help you
• We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit https://www.abcam.com/abpromise or contact our technical team.

Terms and conditions

• Guarantee only valid for products bought direct from Abcam or one of our authorized distributors