

### Human Thrombin ELISA Kit ab270210

Recombinant SimpleStep ELISA<sup>®</sup>

[1 References](#) [6 Images](#)

#### Overview

**Product name** Human Thrombin ELISA Kit

**Detection method** Colorimetric

#### Precision

Intra-assay

Sample	n	Mean	SD	CV%
Serum	3			2.4%

Inter-assay

Sample	n	Mean	SD	CV%
Serum	8			3.8%

**Sample type**

Serum, Cell culture media, Hep Plasma, EDTA Plasma, Cit plasma

**Assay type**

Sandwich (quantitative)

**Sensitivity**

55 pg/ml

**Range**

140.63 pg/ml - 9000 pg/ml

#### Recovery

Sample specific recovery

Sample type	Average %	Range
Serum	96	91% - 99%
Cell culture media	97	96% - 101%
Hep Plasma	91	90% - 92%
EDTA Plasma	95	93% - 99%
Cit plasma	92	91% - 93%

**Assay time**

1h 30m

**Assay duration**

One step assay

**Species reactivity****Reacts with:** Human**Product overview**

Human Thrombin ELISA Kit (ab270210) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of Thrombin protein in cell culture media, edta plasma, serum, cit plasma, and hep plasma. It uses our proprietary SimpleStep ELISA® technology. Quantitate Human Thrombin with 55 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 SimpleStep ELISA® kits.

**Notes**

Thrombin (activated Factor II [IIa]) is a coagulation protein that has many effects in the coagulation cascade. Thrombin is a serine protease that converts soluble fibrinogen into insoluble strands of fibrin, as well as catalyzing many other coagulation-related reactions. Thrombin is in the form of alpha-thrombin that is the immediate end-product of prothrombin activation: two further thrombin products can be identified, beta- and gamma-thrombin. These are degraded forms that may arise from autodigestion of a thrombin preparation. Human Thrombin shares 81%, sequence homology with mouse and bovine as well as 80% with rat.

**Platform**

Pre-coated microplate (12 x 8 well strips)

**Properties****Storage instructions**

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

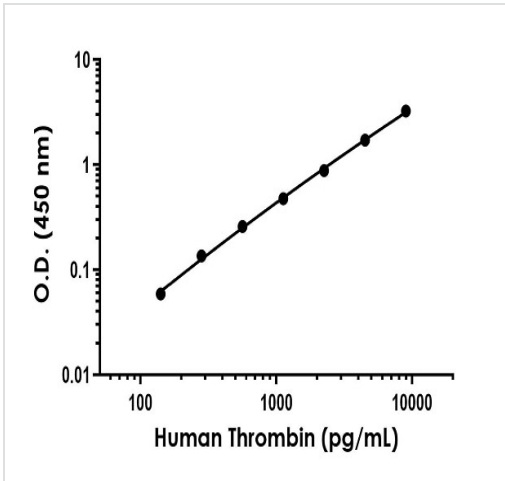
Components	1 x 96 tests
10X Human Thrombin Capture Antibody	1 x 600µl
10X Human Thrombin Detector Antibody	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml
50X Cell Extraction Enhancer Solution (ab193971)	1 x 1ml
Antibody Diluent 4BI	1 x 6ml
Human Thrombin Lyophilized Recombinant Protein	2 vials
Plate Seals	1 unit

Components	1 x 96 tests
Sample Diluent NS (ab193972)	1 x 50ml
SimpleStep Pre-Coated 96-Well Microplate (ab206978)	1 unit
Stop Solution	1 x 12ml
TMB Development Solution	1 x 12ml

<b>Function</b>	Thrombin, which cleaves bonds after Arg and Lys, converts fibrinogen to fibrin and activates factors V, VII, VIII, XIII, and, in complex with thrombomodulin, protein C. Functions in blood homeostasis, inflammation and wound healing.
<b>Tissue specificity</b>	Expressed by the liver and secreted in plasma.
<b>Involvement in disease</b>	Factor II deficiency Ischemic stroke Thrombophilia due to thrombin defect Pregnancy loss, recurrent, 2
<b>Sequence similarities</b>	Belongs to the peptidase S1 family. Contains 1 Gla (gamma-carboxy-glutamate) domain. Contains 2 kringle domains. Contains 1 peptidase S1 domain.
<b>Post-translational modifications</b>	The gamma-carboxyglutamyl residues, which bind calcium ions, result from the carboxylation of glutamyl residues by a microsomal enzyme, the vitamin K-dependent carboxylase. The modified residues are necessary for the calcium-dependent interaction with a negatively charged phospholipid surface, which is essential for the conversion of prothrombin to thrombin. N-glycosylated. N-glycan heterogeneity at Asn-121: Hex3HexNAc3 (minor), Hex4HexNAc3 (minor) and Hex5HexNAc4 (major). At Asn-143: Hex4HexNAc3 (minor) and Hex5HexNAc4 (major).
<b>Cellular localization</b>	Secreted, extracellular space.

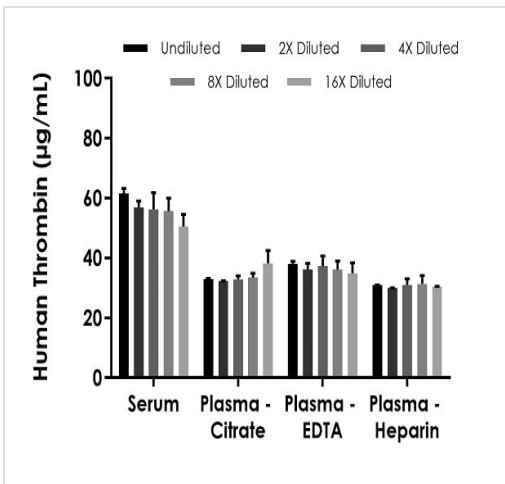
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## Images



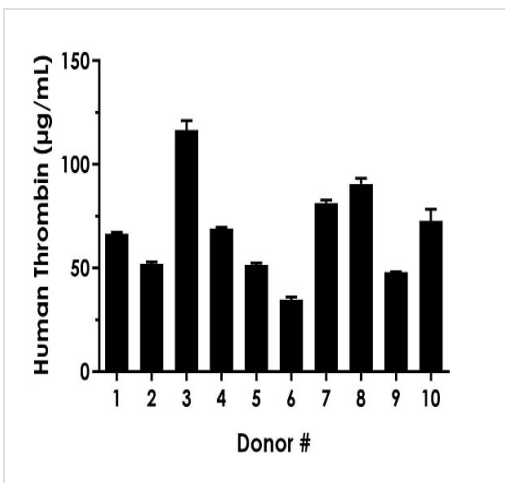
Example of human Thrombin standard curve in Sample Diluent NS +1X Enhancer.

The Thrombin 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.



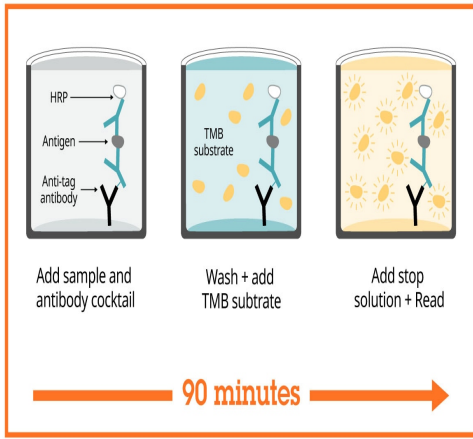
Interpolated concentrations of native Thrombin in human serum and plasma samples.

The concentrations of Thrombin were measured in duplicates, interpolated from the Thrombin standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 1:20,000, plasma (citrate) 1:10,000, plasma (EDTA) 1:10,000, and plasma (heparin) 1:10,000. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Thrombin concentration was determined to be 56 µg/mL in serum, 34 µg/mL in plasma (citrate), 37 µg/mL in plasma (EDTA), and 31 µg/mL in plasma (heparin).



Serum from ten individual healthy human female donors was measured in duplicate.

Interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Thrombin concentration was determined to be 68 µg/mL with a range of 35 – 117 µg/mL.



Sandwich ELISA - Human Thrombin ELISA Kit  
(ab270210)

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.

Powered by recombinant antibodies

- Research with confidence**  
Consistent and reproducible results
- Long-term and scalable supply**  
Recombinant technology
- Success from the first experiment**  
Confirmed specificity
- Ethical standards compliant**  
Animal-free production

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To learn more about the advantages of recombinant antibodies see [here](#).

Get more done with SimpleStep ELISA

- Easy to use**  
Single-wash 90-minute protocol
- Flexible**  
Matched antibody pairs available
- Precision antibodies**  
High sensitivity, specificity and reproducibility
- Scalable**  
Now in 10-pack and 384-well formats

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To learn more about the advantages of SimpleStep ELISA<sup>®</sup> kits see [here](#).

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

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