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Product datasheet

Human ADAMTS13 ELISA Kit ab234559

Recombinant SimpleStep ELISA

7 References 13 Images

Overview

Product name Human ADAMTS13 ELISA Kit

Detection method Colorimetric

Precision

Intra-assay

Sample	n	Mean	SD	CV%
Serum	5			3.4%

Inter-assay

Sample	n	Mean	SD	CV%
Serum	3			2.6%

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

Assay type Sandwich (quantitative)

Sensitivity 16 pg/ml

Range 0.125 ng/ml - 10 ng/ml

Recovery

Sample specific recovery

Sample type	Average %	Range
Serum	109	105% - 115%
Tissue Extracts	96	93% - 100%
Cell culture media	99	97% - 100%
Hep Plasma	107	103% - 111%
EDTA Plasma	100	98% - 104%
Cit plasma	102	100% - 105%

Assay time	1h 30m
Assay duration	One step assay
Species reactivity	**Reacts with:** Human **Does not react with:** Cow
Product overview	Human ADAMTS13 ELISA Kit (ab234559) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of ADAMTS13 protein in cit plasma, edta plasma, hep plasma, serum, tissue extracts, and cell culture supernatant. It uses our proprietary SimpleStep ELISA® technology. Quantitate Human ADAMTS13 with 16 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. **ASSAY SPECIFICITY** This kit recognizes both native and recombinant human ADAMTS13 protein in serum, plasma, and cell culture supernatant, cell and tissue extract samples only. Urine, milk, and saliva samples have not been tested with this kit. **INTERFERENCE** Recombinant human Von Willebrand Factor was prepared at 50 ng/mL and 1 ng/mL and tested for interference with 5 ng/mL recombinant human ADAMTS13. Interference of 9% was observed with 50 ng/mL Von Willebrand Factor. No interference with was observed 1 ng/mL Von Willebrand Factor. **SPECIES REACTIVITY** This kit recognizes human ADAMTS13 protein. Other species reactivity was determined by measuring 1:200 serum samples of various species, interpolating the protein concentrations from the human standard curve, and expressing the interpolated concentrations as a percentage of the protein concentration in human serum assayed at the same dilution.

Reactivity < 3% was determined for the following species: Mouse, Rat, Cow

Notes

Abcam has not and does not intend to apply for the REACH Authorisation of customers' uses of products that contain European Authorisation list (Annex XIV) substances.
It is the responsibility of our customers to check the necessity of application of REACH Authorisation, and any other relevant authorisations, for their intended uses.

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	1 x 96 tests
10X Human ADAMTS13 Capture Antibody	1 x 600µl	1 x 600µl
10X Human ADAMTS13 Detector Antibody	1 x 600µl	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml	1 x 20ml
50X Cell Extraction Enhancer Solution (ab193971)	1 x 1ml	1 x 1ml
5X Cell Extraction Buffer PTR (ab193970)	1 x 10ml	1 x 10ml
Antibody Diluent CPI2	1 x 6ml	1 x 6ml
Human ADAMTS13 Lyophilized Recombinant Protein	2 vials	2 vials
Plate Seals	1 unit	1 unit
Sample Diluent NS (ab193972)	1 x 50ml	1 x 50ml
SimpleStep Pre-Coated 96-Well Microplate (ab206978)	1 unit	1 unit
Stop Solution	1 x 12ml	1 x 12ml
TMB Development Solution	1 x 12ml	1 x 12ml

Function

Cleaves the vWF multimers in plasma into smaller forms.

Tissue specificity

Plasma. Expressed primarily in liver.

Involvement in disease

Defects in ADAMTS13 are the cause of thrombotic thrombocytopenic purpura congenital (TTP) [MIM:274150]; also known as Upshaw-Schulman syndrome (USS). A hematologic disease characterized by hemolytic anemia with fragmentation of erythrocytes, thrombocytopenia, diffuse and non-focal neurologic findings, decreased renal function and fever.

Sequence similarities

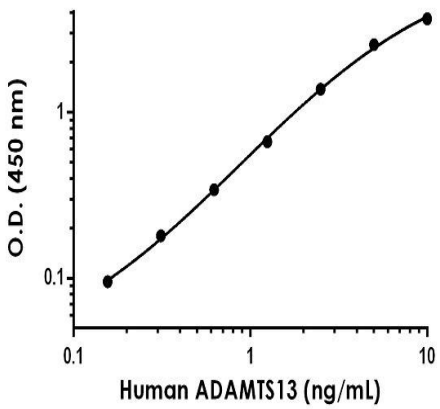
Contains 2 CUB domains.
Contains 1 disintegrin domain.
Contains 1 peptidase M12B domain.
Contains 8 TSP type-1 domains.

Domain

The pro-domain is not required for folding or secretion and does not perform the common function of maintening enzyme latency.
The spacer domain is necessary to recognize and cleave vWF. The C-terminal TSP type-1 and

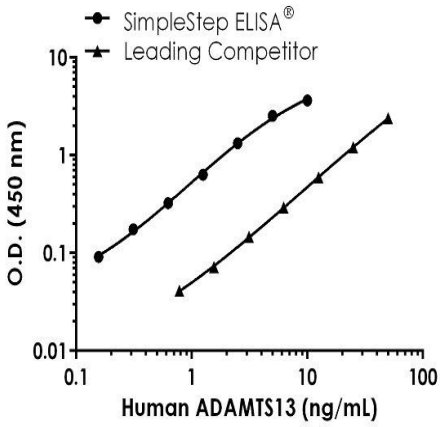
	CUB domains may modulate this interaction.
Post-translational modifications	May contain a C-mannosylation site and O-fucosylation sites in the TSP type-1 domains. The precursor is processed by a furin endopeptidase which cleaves off the pro-domain.
Cellular localization	Secreted.

Images



Example of human ADAMTS13 standard curve in Sample Diluent NS.

The ADAMTS13 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.



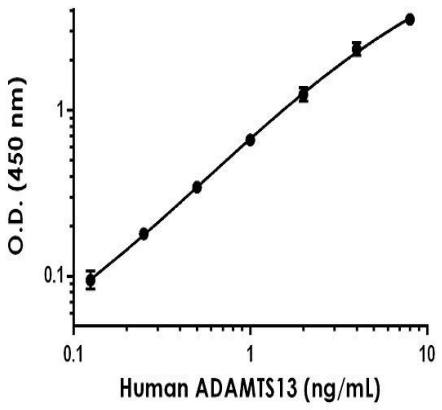
Human ASAMTS13 Competitor Std Curve Comparison

Standard curve comparison between human ADAMTS13 SimpleStep ELISA® kit and traditional ELISA kit from leading competitor. SimpleStep ELISA kit shows increased sensitivity.

Standard Curve Measurements			
Concentration (ng/mL)	O.D 450 nm		Mean O.D
	1	2	
0	0.049	0.049	0.049
0.156	0.140	0.148	0.144
0.313	0.225	0.235	0.230
0.625	0.373	0.409	0.391
1.25	0.680	0.751	0.715
2.5	1.375	1.483	1.429
5	2.588	2.628	2.608
10	3.682	3.718	3.700

Example of human ADAMTS13 standard curve in Sample Diluent NS.

The ADAMTS13 standard curve was prepared as described. Raw data values are shown in the table. Background-subtracted data values (mean +/- SD) are graphed.



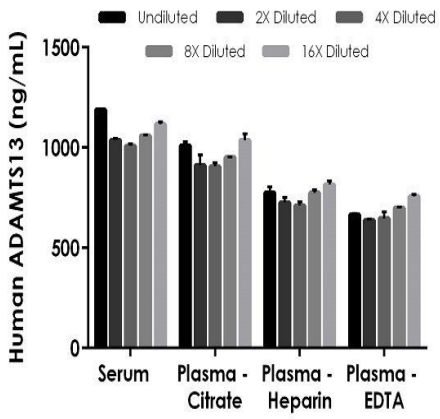
Example of human ADAMTS13 standard curve in 1X Cell Extraction Buffer PTR.

The ADAMTS13 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.

Standard Curve Measurements			
Concentration (ng/mL)	O.D 450 nm		Mean O.D
	1	2	
0	0.046	0.055	0.051
0.125	0.155	0.137	0.146
0.25	0.240	0.223	0.231
0.5	0.411	0.381	0.396
1	0.753	0.676	0.714
2	1.380	1.213	1.297
4	2.532	2.235	2.383
8	3.631	3.516	3.573

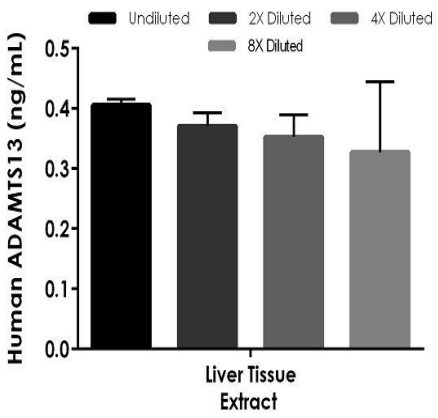
Example of human ADAMTS13 standard curve in 1X Cell Extraction Buffer PTR.

The ADAMTS13 standard curve was prepared as described. Raw data values are shown in the table. Background-subtracted data values (mean +/- SD) are graphed.



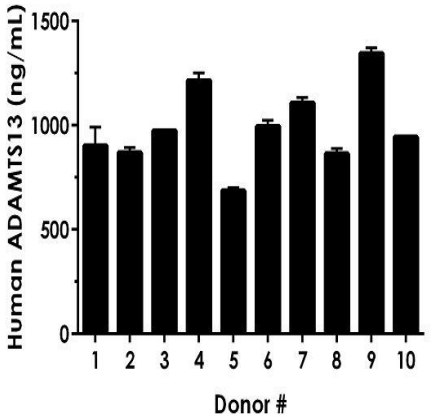
Interpolated concentrations of native ADAMTS13 in human serum and plasma samples.

The concentrations of ADAMTS13 were measured in duplicates, interpolated from the ADAMTS13 standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 1:200, plasma (citrate) 1:200, plasma (heparin) 1:200 and plasma (EDTA) 1:200. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean ADAMTS13 concentration was determined to be 1,082 ng/mL in neat serum, 963.3 ng/mL in neat plasma (citrate), 760.3 ng/mL in neat plasma (heparin), and 681.5 ng/mL in neat plasma (EDTA).



Interpolated concentrations of native ADAMTS13 in human liver tissue extract based on a 1,000 µg/mL extract load.

The concentrations of ADAMTS13 were measured in duplicate and interpolated from the ADAMTS13 standard curve and corrected for sample dilution. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean ADAMTS13 concentration was determined to be 0.364 ng/mL in human liver tissue extract.



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 ADAMTS13 concentration was determined to be 990.8 ng/mL with a range of 687.3 – 1,346 ng/mL.

Dilution Factor	Interpolated value	1:200 Human Serum	1:200 Human Plasma (Citrate)	1:200 Human Plasma (Heparin)	1:200 Human Plasma (EDTA)	100% RPMI Culture Media
Undiluted	ng/mL	5.95	5.05	3.88	3.33	4.59
	% Expected value	100	100	100	100	100
2	ng/mL	2.59	2.28	1.82	1.60	2.17
	% Expected value	87	90	94	96	95
4	ng/mL	1.26	1.13	0.89	0.81	1.13
	% Expected value	85	90	91	97	98
8	ng/mL	0.66	0.60	0.48	0.44	0.59
	% Expected value	89	94	100	105	102
16	ng/mL	0.35	0.32	0.25	0.24	0.31
	% Expected value	94	103	105	114	109

Linearity of dilution in Sample Diluent NS.

Linearity of dilution is determined based on interpolated values from the standard curve. Linearity of dilution defines a sample concentration interval in which interpolated target concentrations are directly proportional to sample dilution.

Native ADAMTS13 was measured in serum and plasma samples in a 2-fold dilution series. Sample dilutions are made in Sample Diluent NS.

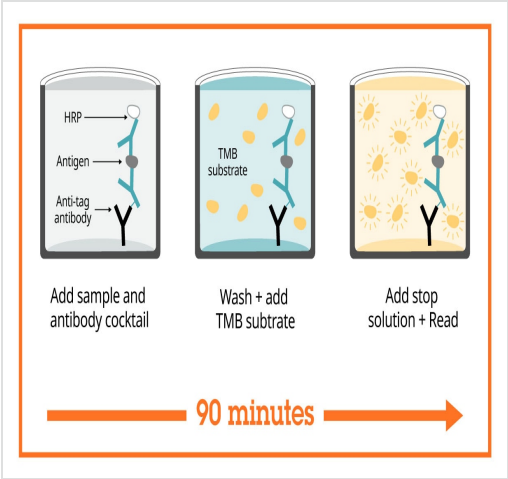
Recombinant ADAMTS13 was spiked into neat RPMI cell culture media containing 10% FBS and diluted in a 2-fold dilution series in Sample Diluent NS.

Dilution Factor	Interpolated value	1,000 µg/mL Human Liver Tissue Extract
Undiluted	ng/mL	0.406
	% Expected value	100
2	ng/mL	0.186
	% Expected value	91
4	ng/mL	0.088
	% Expected value	87
8	ng/mL	0.041
	% Expected value	81
16	ng/mL	ND
	% Expected value	ND

Linearity of dilution in 1X Cell Extraction Buffer PTR.

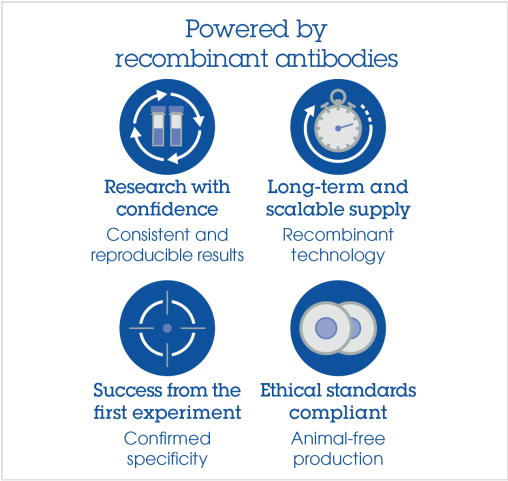
Linearity of dilution is determined based on interpolated values from the standard curve. Linearity of dilution defines a sample concentration interval in which interpolated target concentrations are directly proportional to sample dilution.

Native ADAMTS13 was measured in the following biological samples in a 2-fold dilution series. Sample dilutions are made in 1X Cell Extraction Buffer PTR.



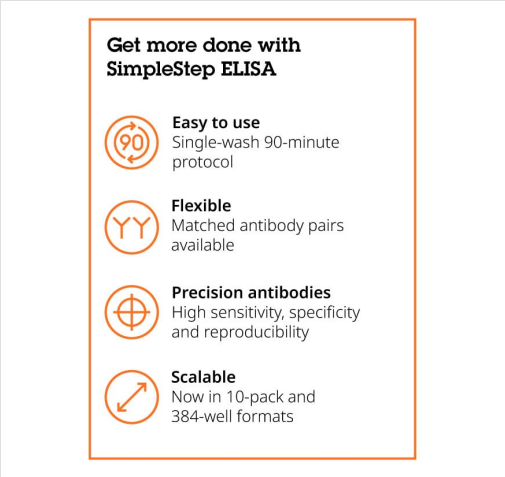
Sandwich ELISA - Human ADAMTS13 ELISA Kit (ab234559)

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.



Sandwich ELISA - Human ADAMTS13 ELISA Kit (ab234559)

To learn more about the advantages of recombinant antibodies see **here**.



Sandwich ELISA - Human ADAMTS13 ELISA Kit (ab234559)

To learn more about the advantages of SimpleStep ELISA® kits see **here**.

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