

Human Furin ELISA Kit ab282292

Recombinant SimpleStep ELISA

7 Images

Overview

Product name	Human Furin ELISA Kit				
Detection method	Colorimetric				
Precision	Intra-assay				
	Sample	n	Mean	SD	CV%
	Plasma	8			10.3%
	Inter-assay				
	Sample	n	Mean	SD	CV%
	Plasma	3			13%
Sample type	Cell culture supernatant, Saliva, Serum, Hep Plasma, EDTA Plasma				
Assay type	Sandwich (quantitative)				
Sensitivity	0.05 ng/ml				
Range	0.16 ng/ml - 10 ng/ml				
Recovery	Sample specific recovery				
	Sample type	Average %		Range	
	Saliva	101		97% - 104%	
	Serum	113		103% - 132%	
	Hep Plasma	103		100% - 106%	
	EDTA Plasma	99		98% - 101%	
	Cit plasma	103		99% - 107%	
Assay time	1h 30m				
Assay duration	One step assay				

Species reactivity

Reacts with: Human

Product overview

Human Furin ELISA kit (ab282292) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of Human Furin protein in human plasma, serum, saliva and cell culture supernatant samples. It uses our proprietary SimpleStep ELISA® technology. Quantitate Human Furin with 0.05 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

Furin, also referred to as dibasic-processing enzyme and Paired basic amino acid residue-cleaving enzyme (PACE), is a calcium-dependent serine endoprotease enzyme encoded by the *FURIN* gene. Furin belongs to the subtilisin-like proprotein convertase family S8. An 81 amino acid long inhibition peptide acts as a chaperone, is autocatalytically removed in the endoplasmic reticulum, and remains non-covalently bound until a second cleavage occurs in the trans Golgi. Furin acts on many substrates including but not limited to parathyroid hormone, transforming growth factor beta 1, proalbumin, and von Willebrand factor. Furin also acts on virus and is thought to activate the HIV envelope glycoproteins gp160 and gp140, and is thought to cleave the S1/S2 site of the spike protein of the SARS-CoV-2 coronavirus.

Platform

Pre-coated microplate (12 x 8 well strips)

Properties

Storage instructions

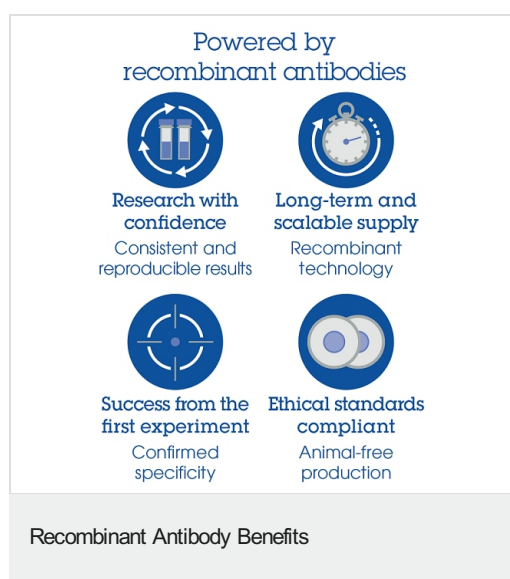
Store at +4°C. Please refer to protocols.

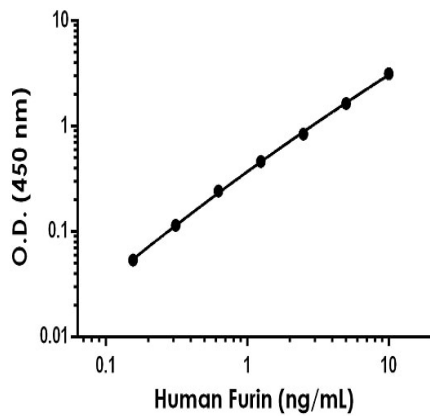
Components	1 x 96 tests
10X Human Furin Capture Antibody	1 x 600µl
10X Human Furin Detector Antibody	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml
Antibody Diluent CPI2	1 x 6ml
Human Furin Lyophilized Recombinant Protein	2 vials
Plate Seals	1 unit

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

Function	Furin is likely to represent the ubiquitous endoprotease activity within constitutive secretory pathways and capable of cleavage at the RX(K/R)R consensus motif.
Tissue specificity	Seems to be expressed ubiquitously.
Sequence similarities	Belongs to the peptidase S8 family. Furin subfamily. Contains 1 homo B/P domain.
Domain	Contains a cytoplasmic domain responsible for its TGN localization and recycling from the cell surface.
Post-translational modifications	The inhibition peptide, which plays the role of an intramolecular chaperone, is autocatalytically removed in the endoplasmic reticulum (ER) and remains non-covalently bound to furin as a potent autoinhibitor. Following transport to the trans Golgi, a second cleavage within the inhibition propeptide results in propeptide dissociation and furin activation. Phosphorylation is required for TGN localization of the endoprotease. In vivo, exists as di-, mono- and non-phosphorylated forms.
Cellular localization	Golgi apparatus > trans-Golgi network membrane. Cell membrane. Shuttles between the trans-Golgi network and the cell surface. Propeptide cleavage is a prerequisite for exit of furin molecules out of the endoplasmic reticulum (ER). A second cleavage within the propeptide occurs in the trans Golgi network (TGN), followed by the release of the propeptide and the activation of furin.

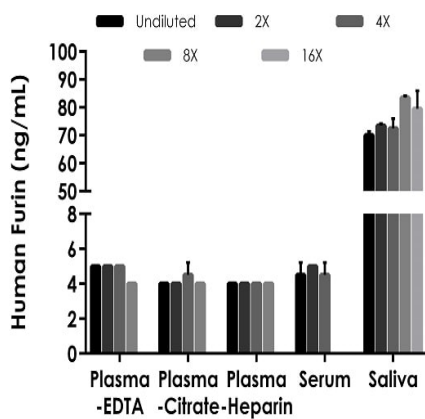
Images





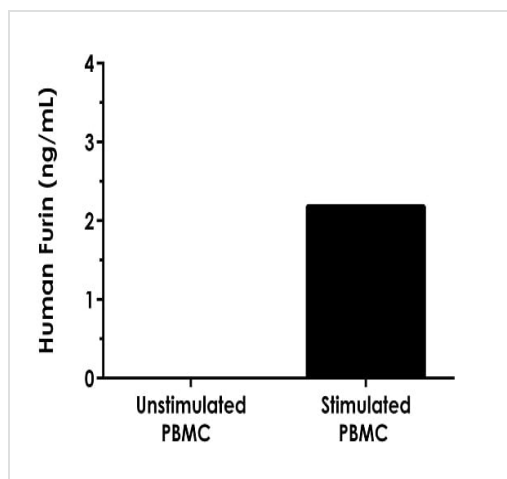
Example of human Furin standard curve in Sample Diluent NS.

The Furin standard curve was prepared as described in Section 10. Raw data values are shown in the table. Background-subtracted data values (mean \pm SD) are graphed.



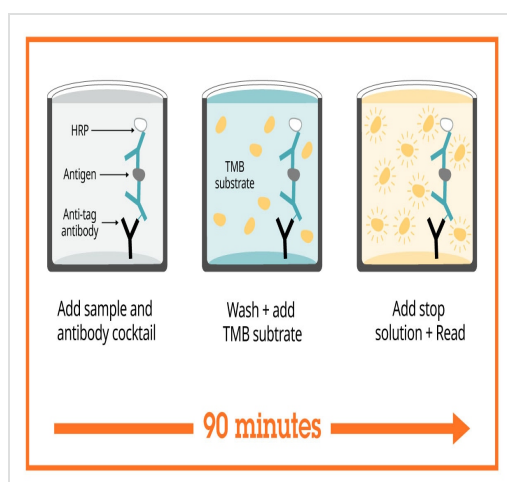
Interpolated concentrations of native Furin in human plasma (EDTA), plasma (Citrate), plasma (Heparin), serum, and saliva.

The concentrations of Furin were measured in duplicates, interpolated from the target standard curves and corrected for sample dilution. Undiluted samples are as follows: 50% plasma (EDTA), 50% plasma (Citrate), 50% Plasma (Heparin), 25% serum, and 7.5% saliva. The interpolated dilution factor corrected values are plotted (mean \pm SD, $n=2$). The mean target concentration was determined to be 4.8 ng/mL in plasma (EDTA), 4.1 ng/mL in plasma (Citrate) and 4 ng/mL in and plasma (Heparin), 4.6 ng/mL in serum, and 76 ng/mL in saliva.



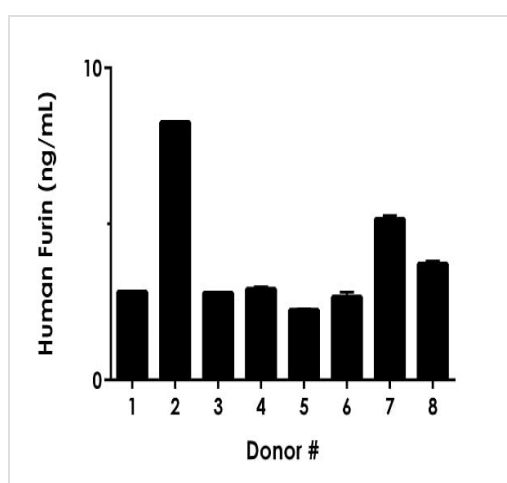
PBMC cells were stimulated with 1.5% PHA-M or vehicle control in RPMI containing 10 % FBS and incubated for 46 hours

The concentrations of Furin were measured in duplicate and interpolated from the Furin standard curves. Undiluted samples are PHA-M stimulated PBMC cell culture supernatant 50% and unstimulated PBMC cell culture supernatant 50%. The interpolated dilution factor corrected values are plotted (mean \pm SD, $n=2$). The mean Furin concentration was calculated to be 2.24 ng/mL in PHA-M stimulated PBMC cell culture supernatant and undetectable in the unstimulated PBMC control.



Sandwich ELISA - Human Furin ELISA Kit
(ab282292)

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.



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

Interpolated dilution factor corrected values are plotted (mean \pm SD, $n=2$). The mean Furin concentration was determined to be 3.8 ng/mL with a range of 2.2 – 8.3 ng/mL.

**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

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

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