abcam

Product datasheet

Human Beta-2-Microglobulin ELISA Kit ab181423

Recombinant SimpleStep ELISA

2 References 8 Images

Overview

Product name Human Beta-2-Microglobulin ELISA Kit

Detection method Colorimetric

Precision

Intra-assay

Sample	n	Mean	SD	CV%
Human Serum	8			3.8%

Inter-assay

Sample	n	Mean	SD	CV%
Human Serum	3			2%

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

Assay type Sandwich (quantitative)

Sensitivity 21.2 pg/ml

Range 62.5 pg/ml - 4000 pg/ml

Recovery

Sample specific recovery

Sample type	Average %	Range
Cell culture supernatant	91	89% - 94%
Urine	94	87% - 100%
Serum	91	90% - 92%
Hep Plasma	90	88% - 91%
EDTA Plasma	90	87% - 89%
Cit plasma	90	89% - 91%

Assay time	1h 30m
Assay duration	One step assay
Species reactivity	**Reacts with:** Human
Product overview	**Human B2M ELISA kit has been re-developed. We have identified new recombinant monoclonal antibodies to provide improved performance and consistency.**

Human Beta-2-Microglobulin ELISA kit (ab181423) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of B2M protein in human serum, plasma, urine and cell culture supernatant. It uses our proprietary SimpleStep ELISA® technology. Quantitate human B2M with 31.25 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 SimpeStep ELISA® kits.

Notes	Beta-2-Microglobulin (B2M) is a component of the class I major histocompatibility complex (MHC) involved in the presentation of peptide antigens to the immune system. The full length B2M protein exists as a heterodimer of an alpha chain and a beta chain. Defects in B2M are the cause of hypercatabolic hypoproteinemia (HYCATHYP) where affected individuals show marked reduction in serum concentrations of immunoglobulin and albumin, probably due to rapid degradation. Persistently high B2M serum levels lead to amyloidosis in patients on long-term hemodialysis.
Platform	Microplate

Properties

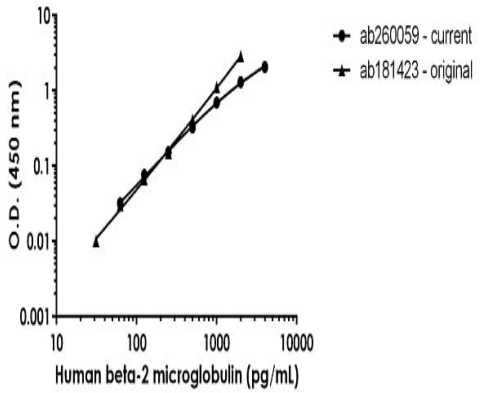
Storage instructions	Store at +4°C. Please refer to protocols.

Components	1 x 96 tests	1 x 96 tests
10X Human B2M Capture Antibody	1 x 600µl	1 x 600µl
10X Human B2M Detector Antibody	1 x 600µl	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml	1 x 20ml
Antibody Diluent CPI - HAMA Blocker (ab193969)	1 x 6ml	1 x 6ml
Human B2M Lyophilized Recombinant Protein	2 vials	2 vials

Components	1 x 96 tests	1 x 96 tests
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

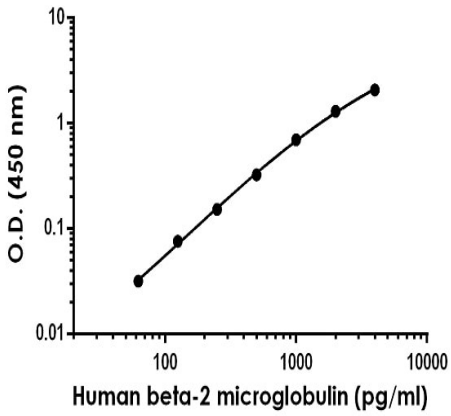
Function	Component of the class I major histocompatibility complex (MHC). Involved in the presentation of peptide antigens to the immune system.
Involvement in disease	Defects in B2M are the cause of hypercatabolic hypoproteinemia (HYCATHYP) [MIM:241600]. Affected individuals show marked reduction in serum concentrations of immunoglobulin and albumin, probably due to rapid degradation. Note=Beta-2-microglobulin may adopt the fibrillar configuration of amyloid in certain pathologic states. The capacity to assemble into amyloid fibrils is concentration dependent. Persistently high beta(2)-microglobulin serum levels lead to amyloidosis in patients on long-term hemodialysis.
Sequence similarities	Belongs to the beta-2-microglobulin family. Contains 1 Ig-like C1-type (immunoglobulin-like) domain.
Post-translational modifications	Glycation of Ile-21 is observed in long-term hemodialysis patients.
Cellular localization	Secreted. Detected in serum and urine.

Images



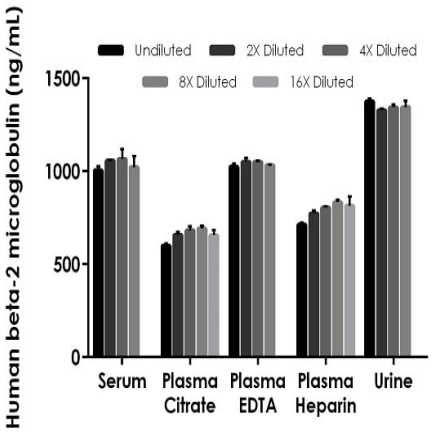
Human beta-2-microglobulin standard curve comparison

Standard Curve comparison between the original Human beta-2-microglobulin SimpleStep ELISA kit and current Human beta-2-microglobulin SimpleStep ELISA kit.



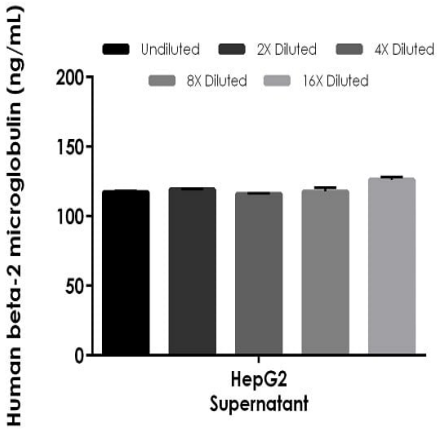
Example of human beta-2 microglobulin standard curve in Sample Diluent NS.

The beta-2 microglobulin 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.



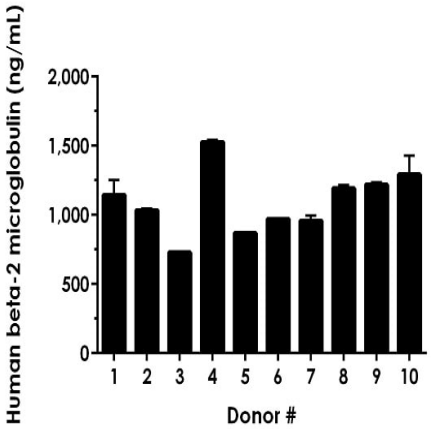
Interpolated concentrations of native beta-2 microglobulin in human serum, plasma, and urine samples.

The concentrations of beta-2 microglobulin were measured in duplicates, interpolated from the beta-2 microglobulin standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 1:400, plasma (citrate) 1:200, plasma (EDTA) 1:400, plasma (heparin) 1:200, and 1:400 urine. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean beta-2 microglobulin concentration was determined to be 1037.2 ng/mL in serum, 657.5 ng/mL in plasma (citrate), 1039.9 ng/mL in plasma (EDTA), 787.5 ng/mL in plasma (heparin), and 1348.2 ng/mL in urine.



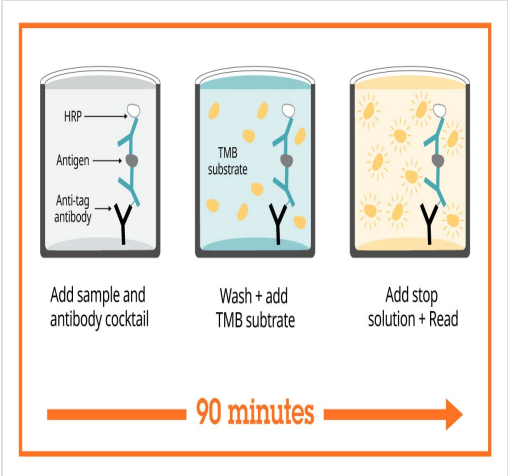
Interpolated concentrations of native beta-2 microglobulin in human HepG2 cell culture supernatant sample.

The concentrations of beta-2 microglobulin were measured in duplicates, interpolated from the beta-2 microglobulin standard curves and corrected for sample dilution. Undiluted samples are as follows: HepG2 cell culture supernatant 1:32. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean beta-2 microglobulin concentration was determined to be 119.4 ng/mL in HepG2 cell culture supernatant.



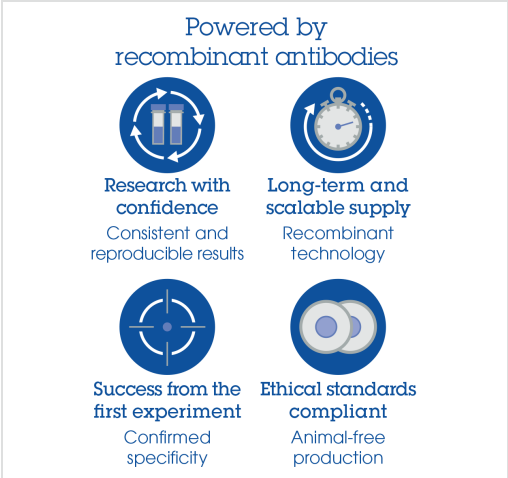
Serum from ten individual healthy human male donors was measured in duplicate.

Interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean beta-2 microglobulin concentration was determined to be 1093.9 ng/mL with a range of 727.2 – 1537.0 ng/mL.



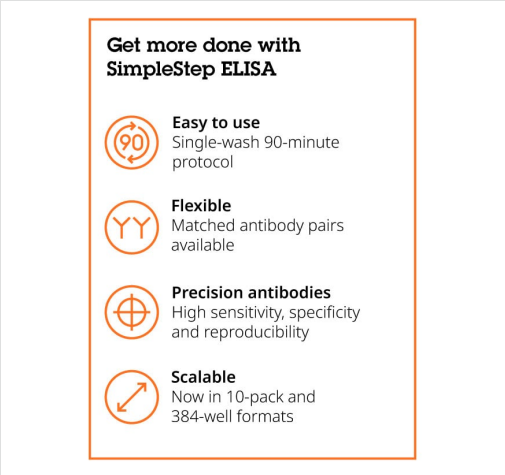
Sandwich ELISA - Human Beta-2-Microglobulin ELISA Kit (ab181423)

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 Beta-2-Microglobulin ELISA Kit (ab181423)

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



Sandwich ELISA - Human Beta-2-Microglobulin ELISA Kit (ab181423)

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

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