abcam

Product datasheet

Human IgM ELISA Kit ab214568
SimpleStep ELISA

4 References   5 Images

Overview

Product name	Human IgM ELISA Kit
Detection method	Colorimetric
Precision	

Intra-assay

Sample	n	Mean	SD	CV%
Plasma	8			4.9%

Inter-assay

Sample	n	Mean	SD	CV%
Plasma	3			5.8%

Sample type	Cell culture supernatant, Saliva, Milk, Serum, Hep Plasma, EDTA Plasma, Cit plasma
Assay type	Sandwich (quantitative)
Sensitivity	50 pg/ml
Range	390.63 pg/ml - 25000 pg/ml
Recovery	

Sample specific recovery

Sample type	Average %	Range
Cell culture supernatant	100	94% - 105%
Saliva	101	94% - 110%
Milk	96	90% - 101%
Serum	96	93% - 98%
Hep Plasma	98	97% - 100%
EDTA Plasma	102	101% - 103%

Sample type	Average %	Range
Cit plasma	108	104% - 114%

Assay time: 1h 30m

Assay duration: One step assay

Species reactivity:
Reacts with: Human
Does not react with: Goat, Cow

Product overview:

Human IgM ELISA Kit (ab214568) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of IgM protein in cell culture supernatant, cit plasma, edta plasma, hep plasma, milk, saliva, and serum. It uses our proprietary SimpleStep ELISA® technology. Quantitate Human IgM with 50 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.

CALIBRATION

ab214568 (IgM) - This immunoassy is calibrated against a highly purified human IgM. The NIBSC/WHO unclassified purified human IgG/IgM/IgG preperation 67/086. was evaluatied in this kit.

The dose response curve of the unclassified standard parallels the SimpleStep standard curve. To convert sample values obtained with the SimpleStep IgM kit to approximate NIBSC International units, use the equation below.

NIBSC 67/086 approximate value (IU/mL) = 0.000249 (2.5e-4 IU) x SimpleStep IgM value (ng/mL)

Notes:

Immunoglobulin M, or IgM, is a basic antibody produced by B cells and the largest of the immunoglobulins in the Human circulatory system. IgM typically constitutes about 10% of serum immunoglobulins and is prominent in the early immune responses. IgM (with IgD) is the major immunoglobulin expressed on the surface of B cells. IgM typically forms pentamers which includes the J chain, while in the less common hexameric form the J chain is absent. Although the common pentameric form of IgM contains 10 antigen binding sites, IgM cannot bind 10 antigens simultaneously due to size constraints. Class specific anti-immunoglobulin antibodies are useful for the characterization of malignant B cell proliferations. Most lymphocytic leukemias share either

surface or intra cytoplasmic Ig with an isotypic restriction, which suggest the monoclonal nature of the cell population. Most of the chronic lymphocytic leukemias, non Hodgkin lymphomas and Burkitt's lymphoma bear surface IgM, whereas plasmocytes from Waldenström's disease bear intracytoplasmic IgM.

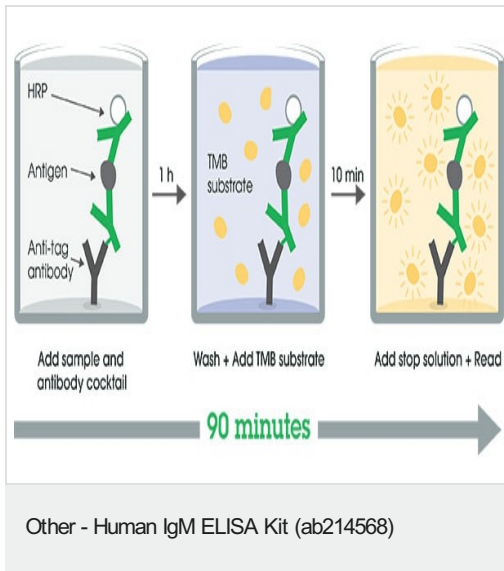**Platform**   Pre-coated microplate (12 x 8 well strips)

Properties

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

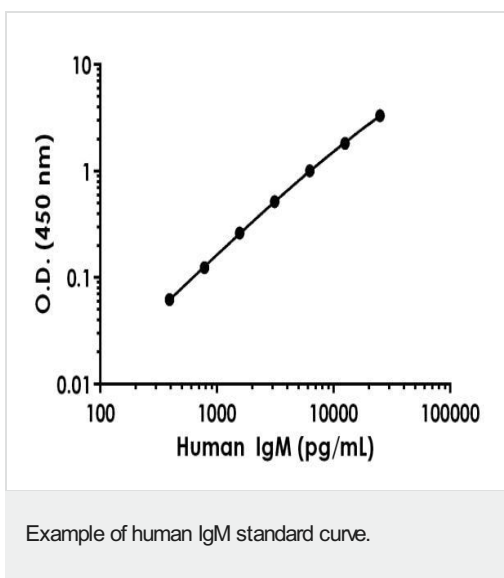| Components	1 x 96 tests	10 x 96 tests
10X Human IgM Capture Antibody	1 x 600µl	10 x 600µl
10X Human IgM Detector Antibody	1 x 600µl	10 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml	1 x 200ml
Antibody Diluent 5BC	1 x 6ml	10 x 6ml
Human IgM Lyophilized Purified Protein	2 vials	10 x 2 vials
Plate Seals	1 unit	10 units
Sample Diluent NS (ab193972)	1 x 50ml	2 x 200ml
SimpleStep Pre-Coated 96-Well Microplate (ab206978)	1 unit	10 units
Stop Solution	1 x 12ml	1 x 120ml
TMB Development Solution	1 x 12ml	1 x 120ml

Relevance   IgM normally constitutes about 10% of serum immunoglobulins. IgM antibody is prominent in early immune responses to most antigens and predominates in certain antibody responses such as 'natural' blood group antibodies. IgM (with IgD) is the major immunoglobulin expressed on the surface of B cells. The gene for the mu constant region contains four domains separated by short intervening sequences. Class specific anti immunoglobulin antibodies are useful for: The characterization of malignant B cell proliferations. All but acute lymphocytic leukemias share either surface or intra cytoplasmic Ig with an isotypic restriction, which suggest the monoclonal nature of the cell population. Most of the chronic lymphocytic leukemias, non Hodgkin lymphomas and Burkitt's lymphoma bear surface IgM, whereas plasmocytes from Waldenström's disease bear intracytoplasmic IgM. The other isotypes are less frequently found. On the other hand multiple myelomas are usually of the IgG or IgA type. Characterization of plasma cells in inflammatory conditions: Plasma cell typing can be of use for the classification of intestinal inflammatory conditions such as inflammatory bowel disease and allergic conditions. In the latter a specific increase in the number of IgE plasma cells can be demonstrated.

Cellular localization   Isoform 1: Secreted. During differentiation, B lymphocytes switch from expression of membrane bound IgM to secretion of IgM. Isoform 2: Cell membrane; Single pass type I membrane protein.
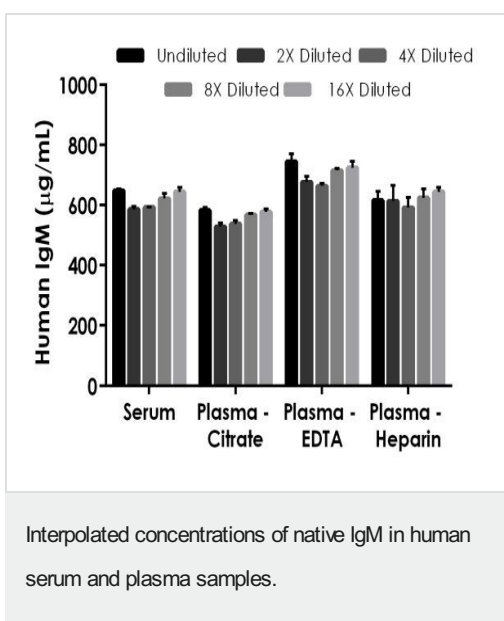
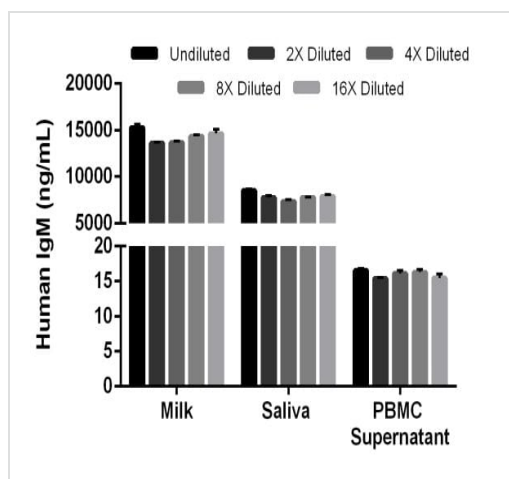## Images

Other - Human IgM ELISA Kit (ab214568)

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.

Example of human IgM standard curve.

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

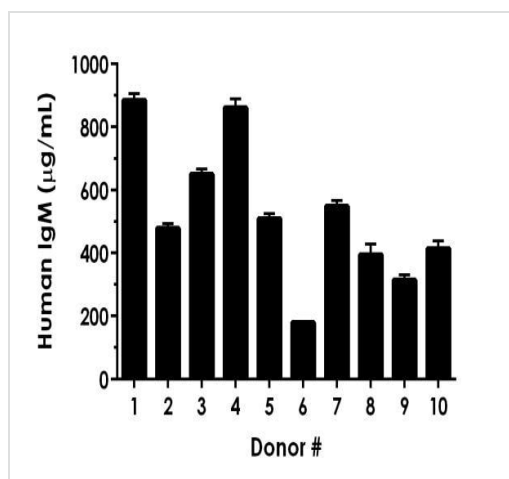Interpolated concentrations of native IgM in human serum and plasma samples.

The concentrations of IgM were measured in duplicates, interpolated from the IgM standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 1:40,000, plasma (citrate) 1:40,000, plasma (EDTA) 1:40,000 and plasma (heparin) 1:40,000. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean IgM concentration was determined to be 618.9 µg/mL in neat serum, 559.0 µg/mL in neat plasma (citrate), 705.1 µg/mL in neat plasma (EDTA), and 618.2 µg/mL in neat plasma (heparin).

Interpolated concentrations of native IgM in human milk, saliva, and PBMC cell culture supernatant samples.

The concentrations of IgM were measured in duplicates, interpolated from the IgM standard curves and corrected for sample dilution. Undiluted samples are as follows: milk 1:750, saliva 1:400, and PBMC cell culture supernatant 50%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean IgM concentration was determined to be 14,328 ng/mL in neat milk, 7,869 ng/mL in neat saliva and 16.0 ng/mL in neat PBMC 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 IgM concentration was determined to be 524 µg/mL with a range of 178 – 901 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