abcam

Product datasheet

Mouse C3 ELISA Kit ab263884

Recombinant SimpleStep ELISA

6 Images

Overview

Product name Mouse C3 ELISA Kit

Detection method Colorimetric

Precision

Intra-assay

Sample	n	Mean	SD	CV%
Serum	8			4.3%

Inter-assay

Sample	n	Mean	SD	CV%
Serum	3			5%

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

Assay type Sandwich (quantitative)

Sensitivity 25.52 pg/ml

Range 62.5 pg/ml - 4000 pg/ml

Recovery

Sample specific recovery

Sample type	Average %	Range
Cell culture supernatant	110	108% - 112%
Serum	111	107% - 113%
Tissue Extracts	111	106% - 115%
Cell culture media	95	94% - 96%
Hep Plasma	105	94% - 116%
EDTA Plasma	112	101% - 119%

Sample type	Average %	Range
Cit plasma	111	106% - 114%

Assay time 1h 30m

Assay duration One step assay

Species reactivity
Reacts with: Mouse
Does not react with: Cow

Product overview
Mouse C3 ELISA Kit (ab263884) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of C3 protein in cell culture media, cell culture supernatant, cit plasma, edta plasma, hep plasma, serum, and tissue extracts. It uses our proprietary SimpleStep ELISA® technology. Quantitate Mouse C3 with 25.52 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
C3, often known as complement component 3, is a protein part of the immune system where it plays a central role in the activation of the complement system. C3 is mainly synthesized in the liver and found to be the most abundant complement protein in serum. C3 is comprised of alpha and beta chains connected covalently by a single disulfide bond and associated by non-covalent forces. Studies have shown people with C3 deficiency are susceptible to bacterial infection. Standard protein in this product is the C3c alpha chain fragment 2.

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
10X Mouse C3 Capture Antibody	1 x 600µl

Components	1 x 96 tests
10X Mouse C3 Detector Antibody	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml
50X Cell Extraction Enhancer Solution (ab193971)	1 x 1ml
5X Cell Extraction Buffer PTR (ab193970)	1 x 10ml
Antibody Diluent 4BR	1 x 6ml
Mouse C3 Lyophilized Recombinant Protein	2 vials
Plate Seals	1 unit
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

C3 plays a central role in the activation of the complement system. Its processing by C3 convertase is the central reaction in both classical and alternative complement pathways. After activation C3b can bind covalently, via its reactive thioester, to cell surface carbohydrates or immune aggregates.
Derived from proteolytic degradation of complement C3, C3a anaphylatoxin is a mediator of local inflammatory process. It induces the contraction of smooth muscle, increases vascular permeability and causes histamine release from mast cells and basophilic leukocytes.

Tissue specificity

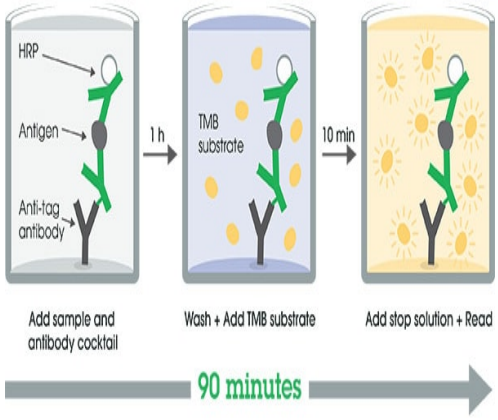
Plasma.

Involvement in disease

Defects in C3 are the cause of complement component 3 deficiency (C3D) [MIM:120700]. A rare defect of the complement classical pathway. Patients develop recurrent, severe, pyogenic infections because of ineffective opsonization of pathogens. Some patients may also develop autoimmune disorders, such as arthralgia and vasculitic rashes, lupus-like syndrome and membranoproliferative glomerulonephritis.
Genetic variation in C3 is associated with susceptibility to age-related macular degeneration type 9 (ARMD9) [MIM:611378]. ARMD is a multifactorial eye disease and the most common cause of irreversible vision loss in the developed world. In most patients, the disease is manifest as ophthalmoscopically visible yellowish accumulations of protein and lipid that lie beneath the retinal pigment epithelium and within an elastin-containing structure known as Bruch membrane.
Defects in C3 are a cause of susceptibility to hemolytic uremic syndrome atypical type 5 (AHUS5) [MIM:612925]. An atypical form of hemolytic uremic syndrome. It is a complex genetic disease characterized by microangiopathic hemolytic anemia, thrombocytopenia, renal failure and absence of episodes of enterocolitis and diarrhea. In contrast to typical hemolytic uremic syndrome, atypical forms have a poorer prognosis, with higher death rates and frequent progression to end-stage renal disease. Note=Susceptibility to the development of atypical hemolytic uremic syndrome can be conferred by mutations in various components of or regulatory factors in the complement cascade system. Other genes may play a role in modifying the phenotype.

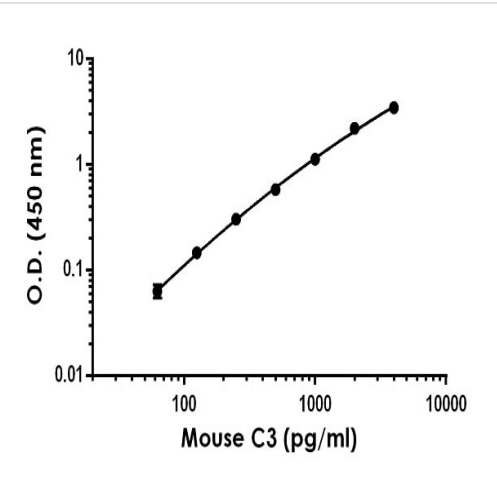
Sequence similarities	Contains 1 anaphylatoxin-like domain. Contains 1 NTR domain.
Post-translational modifications	C3b is rapidly split in two positions by factor I and a cofactor to form iC3b (inactivated C3b) and C3f which is released. Then iC3b is slowly cleaved (possibly by factor I) to form C3c (beta chain + alpha' chain fragment 1 + alpha' chain fragment 2), C3dg and C3f. Other proteases produce other fragments such as C3d or C3g. Phosphorylation sites are present in the extracelllular medium.
Cellular localization	Secreted.

Images



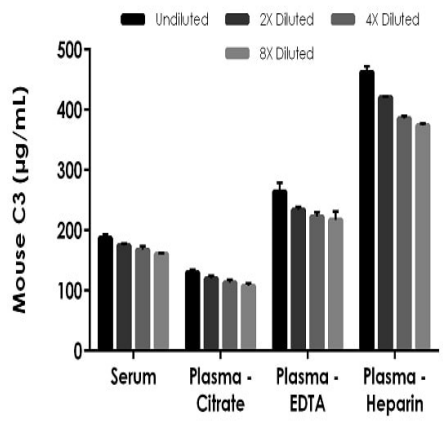
SimpleStep ELISA Protocol Diagram

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.



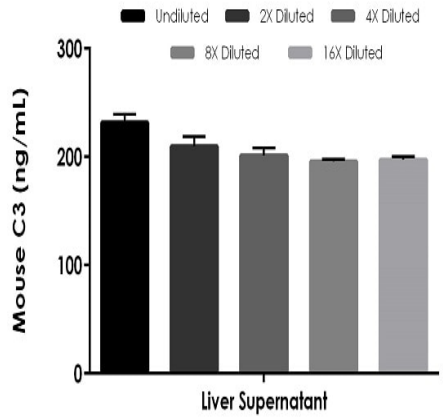
Example of mouse C3 standard curve in Sample Diluent NS + Enhancer.

The C3 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.



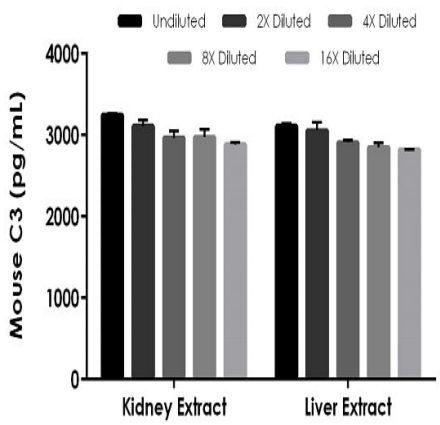
Interpolated concentrations of native C3 in mouse serum and plasma samples.

The concentrations of C3 were measured in duplicates, interpolated from the C3 standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 1:133,333, plasma (citrate) 1:100,000, plasma (EDTA) 1:100,000, and plasma (heparin) 1:133,333. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean C3 concentration was determined to be 172.6 µg/mL in serum, 117.6 µg/mL in plasma (citrate), 234.6 µg/mL in plasma (EDTA), and 410.8 µg/mL in plasma (heparin).



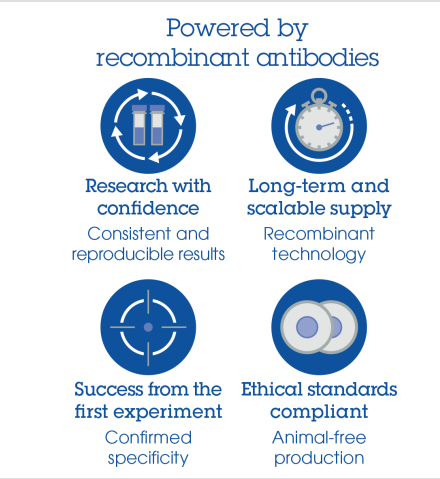
Interpolated concentrations of native C3 in mouse tissue culture supernatant sample.

The concentrations of C3 were measured in duplicates, interpolated from the C3 standard curves and corrected for sample dilution. Undiluted samples are as follows: liver supernatant 1:80. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean C3 concentration was determined to be 207.0 ng/mL liver supernatant.



Interpolated concentrations of native C3 in mouse kidney and liver tissue extracts based on a 10 ng/mL extract load respectively.

The concentrations of C3 were measured in duplicate and interpolated from the C3 standard curve and corrected for sample dilution. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean C3 concentration was determined to be 3,036 pg/mL in kidney tissue and 2,949 pg/mL in liver tissue.



Sandwich ELISA - Mouse C3 ELISA Kit (ab263884)

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