

Datasheet for ABIN1380020  
**Clusterin ELISA Kit**



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**1** Image

Overview

Quantity:	96 tests
Target:	Clusterin (CLU)
Reactivity:	Human
Method Type:	Sandwich ELISA
Detection Range:	63-4000 pg/mL
Minimum Detection Limit:	63 pg/mL
Application:	ELISA

Product Details

Purpose:	The OmniKine <sup>®</sup> Human Clusterin ELISA Kit contains the components necessary for quantitative determination of natural or recombinant Human Clusterin concentrations within any experimental sample including cell lysates, serum and plasma. This particular immunoassay utilizes the quantitative technique of a "Sandwich" Enzyme- Linked Immunosorbent Assay (ELISA) where the target protein (antigen) is bound in a "sandwich" format by the primary capture antibodies coated to each well-bottom and the secondary detection antibodies added subsequently by the investigator. The capture antibodies coated to the bottom of each well are specific for a particular epitope on Human Clusterin while the user-added detection antibodies bind to epitopes on the captured target protein. Amid each step of the procedure, a series of wash steps must be performed to ensure the elimination of non-specific binding between proteins to other proteins or to the solid phase. After incubation and "sandwiching" of the target antigen, a peroxidase enzyme is conjugated to the constant heavy chain of the secondary antibody (either covalently or via Avidin/Streptavidin-Biotin interactions), allowing for a colorimetric reaction to ensue upon substrate addition. When the substrate TMB (3, 3', 5, 5'-
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Product Details

	Tetramethylbenzidine) is added, the reaction catalyzed by peroxidase yields a blue color that is representative of the antigen concentration. Upon sufficient color development, the reaction can be terminated through addition of Stop Solution (2 N Sulfuric Acid) where the color of the solution will turn yellow. The absorbance of each well can then be read by a spectrophotometer, allowing for generation of a standard curve and subsequent determination of protein concentration.
Brand:	OmniKine™
Sample Type:	Cell Lysate, Serum, Plasma
Analytical Method:	Quantitative
Detection Method:	Colorimetric
Specificity:	The Human Clusterin ELISA Kit allows for the detection and quantification of endogenous levels of natural and/or recombinant Human Clusterin proteins.
Cross-Reactivity (Details):	The Human Clusterin ELISA is capable of recognizing both recombinant and naturally produced Human Clusterin proteins. The antigens listed below were tested at 50 ng/mL and did not exhibit significant cross-reactivity or interference. Human: CLUL-1, Leptin, TGF - RI, TGF- RII Murine: Clusterin Rat: Clusterin
Characteristics:	The Human Clusterin ELISA Kit allows for the detection and quantification of endogenous levels of natural and/or recombinant Human Clusterin proteins within the range of 63-4000 pg/mL.
Components:	<ul style="list-style-type: none"><li>• Microstrips Coated w / Capture Antibody: 12 x 8-Well Microstrips</li><li>• Protein Standard: Lyophilized (100 ng), Red container</li><li>• Biotinylated Detection Antibody: Lyophilized, Yellow container</li><li>• 400x Streptavidin-HRP: 30 µL, Blue container</li><li>• Wash Buffer (10x): 50 mL, Clear container</li><li>• Assay Diluent: 50 mL, Clear container</li><li>• Ready-to-Use Substrate: 12 mL, Brown container</li><li>• Stop Solution: 12 mL, Clear container</li><li>• Adhesive Plate Sealers: 4 Sheets</li><li>• Technical Manual 1 Manual</li></ul>
Material not included:	<p>The following materials and/or equipment are NOT provided in this kit but are necessary to successfully conduct the experiment:</p> <p>Microplate reader able to measure absorbance at 450 nm (with correction wavelength set to 540 nm or 570 nm)</p> <p>Micropipettes with capability of measuring volumes ranging from 1 µl to 1 mL</p> <p>Deionized or sterile water</p>

Product Details

Squirt bottle, manifold dispenser, multichannel pipette reservoir or automated microplate washer

Graph paper or computer software capable of generating or displaying logarithmic functions

Absorbent paper or vacuum aspirator

Test tubes or microfuge tubes capable of storing ≥1 mL

Bench

top centrifuge (optional)

Bench

top vortex (optional)

Orbital shaker (optional)

Target Details

Target:	Clusterin (CLU)
Alternative Name:	Clusterin (CLU Products)
Background:	<p>Clusterin is a 449 amino acid secreted protein that can retrotranslocate from the secretory compartments to the cytosol upon cellular stress. It is found in the nucleus, cytoplasm, mitochondrion membrane, peripheral membrane protein, cytoplasmic side, microsome, endoplasmic reticulum, cytoplasmic vesicle, secretory vesicle, and chromaffin granule.</p> <p>Isoforms lacking the N-terminal signal sequence have been shown to be cytoplasmic and/or nuclear. Secreted isoforms can retrotranslocate from the secretory compartments to the cytosol upon cellular stress. Clusterin is detected in perinuclear foci that may be aggresomes containing misfolded, ubiquitinated proteins as well as at the mitochondrion membrane upon induction of apoptosis. Isoform 1 functions as extracellular chaperone that prevents aggregation of nonnative proteins as well as prevents stress- induced aggregation of blood plasma proteins. Clusterin inhibits formation of amyloid fibrils by APP, APOC2, B2M, CALCA, CSN3, SNCA and aggregation-prone LYZ variants (in vitro), and does not require ATP. Clusterin does not refold proteins by itself. Binding of Clusterin to cell surface receptors triggers internalization of the chaperone-client complex and subsequent lysosomal or proteasomal degradation. Secreted isoform 1 protects cells against apoptosis and against cytolysis by complement. Intracellular isoforms interact with ubiquitin and SCF (SKP1- CUL1-F-box protein) E3 ubiquitin-protein ligase complexes and promote the ubiquitination and subsequent proteasomal degradation of target proteins. Clusterin promotes proteasomal degradation of COMMD1 and IKBKB and modulates NFκB transcriptional activity. Nuclear isoforms promote apoptosis. Mitochondrial isoforms suppress BAX-dependent release of cytochrome c into the cytoplasm and inhibit apoptosis. Clusterin plays a role in the regulation of cell proliferation.</p>

## Target Details

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Clusterin interacts with a broad range of misfolded proteins, including APP, APOC2 and LYZ. Slightly acidic pH promotes its interaction with misfolded proteins. Clusterin forms high-molecular weight oligomers upon interaction with misfolded proteins. Clusterin is ubiquitous and can be detected in blood plasma, cerebrospinal fluid, milk, seminal plasma, colon mucosa, the germinal center of colon lymphoid nodules, and in colon parasympathetic ganglia of the Auerbach plexus. It can also be detected in brain, testis, ovary, liver and pancreas, and at lower levels in kidney, heart, spleen and lung.

Pathways: [Apoptosis](#), [Negative Regulation of intrinsic apoptotic Signaling](#)

## Application Details

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Plate: Pre-coated

Protocol: This particular immunoassay utilizes the quantitative technique of a Sandwich Enzyme-Linked Immunosorbent Assay (ELISA) where the target protein (antigen) is bound in a sandwich format by the primary capture antibodies coated to each well-bottom and the secondary detection antibodies added subsequently by the investigator. The capture antibodies coated to the bottom of each well are specific for a particular epitope on the Human Clusterin cytokine while the user-added detection antibodies bind to epitopes on the captured target protein. Amid each step of the procedure, a series of wash steps must be performed to ensure the elimination of non-specific binding between proteins to other proteins or to the solid phase. After incubation and sandwiching of the target antigen, a peroxidase enzyme is conjugated to the constant heavy chain of the secondary antibody (either covalently or via Avidin/Streptavidin-Biotin interactions), allowing for a colorimetric reaction to ensue upon substrate addition. When the substrate TMB (3, 3', 5, 5'-Tetramethylbenzidine) is added, the reaction catalyzed by peroxidase yields a blue color that is representative of the antigen concentration. Upon sufficient color development, the reaction can be terminated through addition of Stop Solution (2 N Sulfuric Acid) where the color of the solution will turn yellow. The absorbance of each well can then be read by a spectrophotometer, allowing for generation of a standard curve and subsequent determination of protein concentration.

Sample Preparation: If samples are to be used within 24 hours, aliquot and store at 4 °C. If samples are to be used over a long period of time, aliquot and store between -20 °C and -80 °C, depending on the duration of storage.

Note: Samples containing a visible precipitate or pellet must be clarified prior to use in the assay.

Caution: Avoid repeated freeze/thaw cycles to prevent loss of biological activity of proteins in

experimental samples.

- Cell Lysate and Supernatants:  
Remove large cell components via centrifugation and perform the assay. Cell lysates and supernatants require a dilution using Assay Diluent. A serial dilution may be performed to determine a suitable dilution factor for the sample. For future use of the sample, follow the sample storage guidelines stated above.
- Serum:  
Allow samples to clot in a serum separator tube (SST) for 30 minutes. After sufficient clotting, centrifuge at 1000 x g for 15 minutes and remove serum from SST in preparation for the assay. Serum samples require at least a 1:50 dilution using Assay Diluent. For future use of the sample, follow the storage guidelines above.
- Plasma:  
Use heparin, citrate or EDTA as an anticoagulant to gather plasma from original biological sample. After collection of the plasma, centrifuge for 15 minutes at 1000 x g. This step must be performed within 30 minutes of plasma collection. Plasma samples require at least a 1:50 dilution using Assay Diluent. Afterwards, perform the assay or for future use of the sample, follow the storage guidelines stated above.

Assay Procedure:

Note: If possible, all incubation steps should be performed on an orbital shaker to equilibrate solutions when added to the microplate wells. Also, all provided solutions should be at ambient temperature prior to use.

Note: Avoid adding solutions into wells at an angle, always keep pipette tip perpendicular to plate bottom.

Reconstitution of Provided Materials:

1. Reconstitute the Biotin-Conjugated Detection Antibody in 67 µL of ddH<sub>2</sub>O for a concentration of 180 µg/ml.
2. Reconstitute the Protein Standard in 100 µL of ddH<sub>2</sub>O for a concentration of 340 ng/ml.
3. Dilute the 50 mL of 10x Wash Buffer in 450 mL of ddH<sub>2</sub>O for 500 mL of 1x Wash Buffer.

Addition of Known Standard and Unknown Sample to Immunoassay:

The OmniKine™ Human CD163 ELISA Kit allows for the detection and quantification of endogenous levels of natural and/or recombinant Human CD163 proteins

Calculation of Results:

Generation of Standard Curve and Interpretation of Data

1. Average the duplicate or triplicate readings for each standard, control and sample and subtract the average zero standard optical density.
2. Generate a standard curve by using Microsoft Excel or other computer software capable of establishing a 4- Parameter Logistic (4-PL) curve fit. If using Excel or an alternative graphing tool, plot the average optical density values in absorbance units (y-axis) against the known standard concentrations in pg/ml (x-axis). Note: Only use the values in which a noticeable

## Application Details

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gradient can be established. Afterwards, generate a best fit curve or trend-line through the plotted points via regression analysis. Note: Shown on the next page is an example of typical data produced by analysis of the standard sample.

Restrictions: For Research Use only

## Handling

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Precaution of Use: Reagents provided in this kit may be harmful if ingested, inhaled or absorbed through the skin. Please carefully review the MSDS for each reagent before conducting the experiment. Stop Solution contains 2 N Sulfuric Acid (H<sub>2</sub>SO<sub>4</sub>) and is an extremely corrosive agent. Please wear proper eye, hand and face protection when handling this material. When the experiment is finished, be sure to rinse the plate with copious amounts of running water to dilute the Stop Solution prior to disposing the plate.

Handling Advice: This ELISA kit is intended for research purposes only, NOT diagnostic or clinical procedures of any kind.

Materials included in this kit should NOT be used past the expiration date on the kit label.

Reagents or substrates included in this kit should NOT be mixed or substituted with reagents or substrates from any other kits.

Variations in pipetting technique, washing technique, operator laboratory technique, kit age, incubation time or temperature may cause differences in binding affinity of the materials provided.

The assay is designed to eliminate interference and background by other cellular macromolecules or factors present within any biological samples. However, the possibility of background noise cannot be fully excluded until all factors have been tested using the assay kit.

Reagents provided in this kit may be harmful if ingested, inhaled or absorbed through the skin. Please carefully review the MSDS for each reagent before conducting the experiment. Stop Solution contains 2 N Sulfuric Acid (H<sub>2</sub>SO<sub>4</sub>) and is an extremely corrosive agent. Please wear proper eye, hand and face protection when handling this material. When the experiment is finished, be sure to rinse the plate with copious amounts of running water to dilute the Stop Solution prior to disposing the plate.

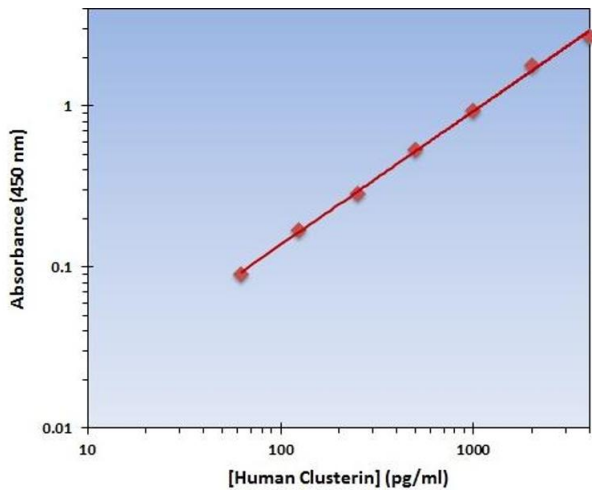
Storage: 4 °C

Storage Comment: Note: If used frequently, reagents may be stored at 4 °C.

- Unopened Kits: Store at 4 °C for 6 months.
- Microstrips Coated w/ Capture Antibody, 400x Streptavidin-HRP Wash Buffer (10x), Assay

Diluent Ready-to-Use Substrate, Stop Solution: 6 Months at 4 °C

- Protein Standard, Biotinylated Detection Antibody: Lyophilized: 6 Months (if Reconstituted: 1 Month) at 4 °C



### ELISA

**Image 1.** This is an example of what a typical standard curve will look like. You must make your own standard curve. Do not use this example as your own standard curve.