

ab309391 – Human Liver Carboxylesterase 1/CES1 ELISA Kit

For the quantitative measurement of Liver Carboxylesterase 1/CES1 in Human Serum, Plasma and Cell culture supernatants.

For research use only - not intended for diagnostic use

For overview, typical data and additional information please visit: www.abcam.com/ab309391

Storage and Stability:

The entire ELISA kit may be stored at -20°C for up to 1 year from the date of shipment. Avoid repeated freeze-thaw cycles. The kit may be stored at 4°C for up to 6 months. For extended storage, it is recommended to store at -80°C. Observe the storage conditions for individual prepared components in the Reagent Preparation

Materials Supplied

Item	Quantity	Storage Condition
Human Carboxylesterase 1/CES1 Antibody-coated ELISA Plate	1 unit	-20°C
20X Wash Buffer	25 mL	-20°C
Lyophilized Human Carboxylesterase 1/CES1 Protein Standard	2 vials	-20°C
Biotinylated Human Carboxylesterase 1/CES1 Detection Antibody	2 vials	-20°C
200X HRP-Streptavidin	200 µL	-20°C
TMB One-Step Substrate Reagent	12 mL	-20°C
Stop Solution; 0.2M Sulfuric Acid	8 mL	-20°C
5X Assay Diluent (Item E2)	30 mL	-20°C

Materials Required, Not Supplied

These materials are not included in the kit, but will be required to successfully utilize this assay:

- Microplate reader capable of measuring absorbance at 450 nm.
- Precision pipettes to deliver 2 µl to 1 ml volumes.
- Adjustable 1-25 ml pipettes for reagent preparation.
- 100 ml and 1 liter graduated cylinders.
- Absorbent paper.
- Distilled or deionized water.
- Tubes to prepare standard or sample dilution

Reagent Preparation

- Equilibrate all reagents to room temperature (18-25°C) prior to use. The kit contains enough reagents for 96 wells.
- Prepare only as much reagent as is needed on the day of the experiment.

5X Assay Diluent (Item E2): - should be diluted 5-fold with deionized or distilled water before use

Sample dilution: 1X Assay Diluent should be used for dilution of serum, plasma, and cell culture supernatant samples. The suggested dilution for normal serum/plasma is 50 fold

Note: Levels of Liver Carboxylesterase 1 CES1 may vary between different samples. Optimal dilution factors for each sample must be determined by the investigator.

Detection Antibody Liver Carboxylesterase 1 CES1: Briefly spin the vial before use. Add 100 µL of 1X Assay Diluent into the vial to prepare a detection antibody concentrate. Pipette up and down to mix gently (the concentrate can be stored at 4°C for 5 days). The detection antibody concentrate should be diluted 80-fold with 1X Assay Diluent.

20X Wash Buffer: If the Wash Concentrate (20X) contains visible crystals, warm to room temperature and mix gently until dissolved. Dilute 20 mL of Wash Buffer Concentrate into deionized or distilled water to yield 400 mL of 1X Wash Buffer.

200X HRP-Streptavidin: Briefly spin the vial of HRP-Streptavidin concentrate before use. HRPStreptavidin should be diluted 200-fold with 1X Assay Diluent

For example: Briefly spin the vial and pipette up and down to mix gently. Add 50 µL of HRPStreptavidin concentrate into a tube with 10 mL 1X Assay Diluent to prepare a 200-fold diluted HRP-Streptavidin solution (don't store the diluted solution for next day use). Mix well.

Standard Preparation

Always prepare a fresh set of standards for every use.

Discard working standard dilutions after use as they do not store well.

The following section describes the preparation of a standard curve for duplicate measurements (recommended).

- Briefly spin the Standard Protein
- Add 400 µl 1X Assay Diluent, Assay Diluent should be diluted 5-fold with deionized or distilled water before use) into the standard protein vial to prepare a 50 ng/ml standard solution. Gently mix the powder to allow it to dissolve thoroughly.
- Add 70 µl standard solution to a tube with 430 µl 1X Assay Diluent to prepare a 7000 pg/ml
- Pipette 200 µl 1X Assay Diluent D into each tube. Use the standard solution to produce a dilution series. Adding 300 µL from #1 to #2, then from #2 to #3, etc
- Mix each tube thoroughly before the next transfer.
- Tube #8 contains no protein and is the Blank control

Tube #	Volume to dilute	Volume of 1X Assay Diluent	Final Concentration pg/mL
1	7000 pg/mL standard stock solution	---	7000
2	300 µL of tube #1	200 µL	2800
3	300 µL of tube #2	200 µL	1120
4	300 µL of tube #3	200 µL	448
5	300 µL of tube #4	200 µL	179.2
6	300 µL of tube #5	200 µL	71.68
7	300 µL of tube #6	200 µL	28.67
8	--	200 µL	0

Assay Procedure

Equilibrate all materials and prepared reagents to room temperature prior to use. We recommend that you assay all standards, controls and samples in duplicate. Prepare all reagents, working standards, and samples as directed in the previous sections.

1. Label removable 8-well strips as appropriate for your experiment.
2. Add 100 μ L of standard or sample into appropriate wells. Cover the wells and incubate for 2.5 hours at room temperature with gentle shaking.
3. Discard the solution and wash 4 times with 1X Wash Solution. Wash by filling each well with Wash Buffer (300 μ L) using a multichannel Pipette or autowasher. Complete removal of liquid at each step is essential for good performance. After the last wash, remove any remaining Wash Buffer by aspirating or decanting. Invert the plate and blot it against clean paper towels.
4. Add 100 μ L of 1X prepared biotinylated antibody to each well. Incubate for 1 hour at room temperature with gentle shaking.
5. Discard the solution. Repeat the wash as in step 3.
6. Add 100 μ L of prepared Streptavidin solution each well. Incubate for 45 minutes at room temperature with gentle shaking.
7. Discard the solution. Repeat the wash as in step 3.
8. Add 100 μ L of TMB Substrate Reagent to each well. Incubate for 30 minutes at room temperature in the dark with gentle shaking.
9. Add 50 μ L of Stop Solution to each well. Read at 450 nm immediately.

Calculation of results

Calculate the mean absorbance for each set of duplicate standards, controls and samples, and subtract the average zero standard optical density. Plot the standard curve on log-log graph paper or using Sigma plot software, with standard concentration on the x-axis and absorbance on the y-axis. Draw the best-fit straight line through the standard points.

Download our ELISA guide for technical hints, results, calculation, and troubleshooting tips:
www.abcam.com/protocols/the-complete-elisa-guide

For technical support contact information, visit: www.abcam.com/contactus

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