MOUSE/RAT EOSINOPHIL CATIONIC PROTEIN (ECP) ELISA KIT

FOR THE QUANTITATIVE DETERMINATION OF MOUSE/RAT EOSINOPHIL CATIONIC PROTEIN (ECP) CONCENTRATIONS IN SERUM AND EDTA PLASMA

ALWAYS REFER TO LOT SPECIFIC PROTCOL PROVIDED WITH EACH KIT FOR INSTRUCTIONS. PROTOCOL MUST BE READ BEFORE USING THIS PRODUCT.

FOR RESEARCH USE ONLY.NOT FOR USE IN DIAGNOSTIC PROCEDURES.

PRODUCT INFORMATION:

THIS KIT IS FOR ONE TIME USE ONLY.

ELISA NAME	**MOUSE/RAT EOSINOPHIL CATIONIC PROTEIN (ECP) ELISA**
Catalog No.	SK00128-03
Lot No.	
Formulation	96 T
Standard range	156 – 10000 pg/mL
Sensitivity	50 pg/mL
Sample require	100 µL
Dilution Factor	**Optimal dilutions should be determined by each laboratory for each application.**
Sample Type	Serum, EDTA Plasma
Specificity	Mouse, Rat
Calibration	Mouse ECP Recombinant
Intra-assay Precision	4 - 6%
Inter-assay Precision	8 - 12%
Storage	2 – 8° C for 1 month. See page 2 for more information
This kit contains sufficient materials to run approximately 40 samples duplicated provided that assay is run according to protocol.	

ORDER CONTACT:
AVISCERA BIOSCIENCE, INC.
2348 Walsh Ave., Suite C
Santa Clara, CA 95051
USA
Tel: (408) 982 0300
Fax: (408) 982 0301
Email: Sales@AvisceraBioscience.com
www.AvisceraBioscience.net
www.AvisceraBioscience.com

DESCRIPTION

This Mouse Eosinophil Cationic Protein (ECP) ELISA Kit contains the necessary components required for the quantitative measurement of recombinant and/or natural mouse ECP from serum and plasma in a sandwich ELISA format.

This immunoassay contains recombinant mouse ECP and antibodies raised against this protein. Results from this immunoassay have shown to accurately quantify recombinant and natural mouse ECP samples. Data also indicates that rat EDTA plasma and serum samples cross-react with Mouse ECP ELISA kit.

ASSAY OVERVIEW

This assay employs the quantitative sandwich ELISA format. The plate is pre-coated with an antibody specific for mouse ECP. The capture antibody can bind to the mouse ECP in the standard and samples. After washing the plate of any unbound substances, a biotinylated antibody against mouse ECP is added to the wells. After another washing of the plate, Streptavidin-HRP Conjugate is added. After the last wash to remove any unbound enzyme, a substrate solution is added to the wells and color develops in direct proportion to the amount of mouse ECP bound in the standard solutions or samples. A standard curve can be established and sample values can be read off the standard curve.

PROCEDURAL LIMITATIONS

_FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES.
_This ELISA kit should not be used beyond the expiration date on the kit label.
_Do not mix reagents with those from other lots or sources.
_It is important that the Dilution Buffer selected for the standard curve be consistent with the samples being assayed.
_Each laboratory must determine the optimal dilution factors for the samples being assayed.
_Any modifications in buffers, pipetting technique, washing technique, incubation time or temperature, as well as kit age can cause a change in signal.
_Not all interfering factors have been tested in the immunoassay, therefore the possibility of interference cannot be excluded.

COMPONENTS PROVIDED

DESCRIPTION	CODE	QUANTITY
ECP Microplate - 96 well polystyrene microplate (12 strips of 8 wells) coated with a purified antibody against ECP.	**128-03-01**	**1 plate**
ECP Standard – 20000 pg/vial of mouse ECP in a buffered protein base with preservative; lyophilized.	**128-03-02**	**1 vial**
Detection Antibody – 1.2 mL/vial, 10-fold concentrate of a biotinylated antibody against ECP with preservative; lyophilized.	**128-03-03**	**1 vial**
Positive Control – one vial of mouse ECP; lyophilized.	**128-03-04**	**1 vial**
Streptavidin-HRP Conjugate - 120 µL/vial, 100-fold concentrated solution of Streptavidin-HRP conjugate.	**SAHRP**	**1 vial**
Dilution Buffer – 45 mL of buffered protein based solution with preservative.	**DB08B**	**1 bottle**
Wash Buffer - 50 mL of 10-fold concentrated buffered surfactant, with preservative.	**WB01**	**1 bottle**
TMB Substrate Solution -11 mL of TMB substrate solution.	**TMB01**	**1 bottle**
Stop Solution - 11 mL of 0.5M HCl.	**S-STOP**	**1 bottle**
Plate Sealer	**EAPS**	**1 piece**
Plastic Pouch	**P01**	**1 piece**

STORAGE

Unopened Kit: Store at 2 – 8° C for up to 1 month. For longer storage for up to 10 months, unopened Standard, Positive Control, Detection Antibody Concentrate and Dilution Buffer should be stored at -20° C. Streptavidin-HRP Conjugate and TMB Substrate Solution should be stored only at 2 – 8 °C. Do not use kit past expiration date.

ADDITIONAL MATERIALS REQUIRED

- Microplate reader capable of absorbance measurement at 450 nm.
- Microplate shaker (350 – 400 rpm).
- Microplate washer or manifold dispenser.
- 100 mL and 500 mL graduated cylinders.
- Multi-channel Pipette, Pipettes and pipette tips.
- Deionized or distilled water.

PRECAUTION

This kit should be handled by those persons who have been trained in and can follow the principles of good laboratory practice. Wear protective clothing such as laboratory overalls, safety glasses and gloves. Care should be taken while handling solutions in this kit to avoid contact with skin or eyes, especially with the stop solution because it contains diluted hydrochloric acid. Wash immediately with water in case of contact on skin or eyes.

SAMPLE COLLECTION AND STORAGE

Serum - Use a serum separator tube (SST) and allow samples to clot for 30 minutes before centrifugation for 15 minutes at 1000 x g. Remove serum and assay immediately or aliquot and store samples at ≤ -20° C. Avoid repeated freeze-thaw cycles.

Plasma - Collect plasma using EDTA, heparin, or citrate as an anticoagulant. Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection. Assay immediately or aliquot and store samples at ≤ -20° C. Avoid repeated freeze-thaw cycles.

Optional: Use Aprotinin (enzyme inhibitor) (Order code: 00700-01-25, 25 TIU per vial) for ALL sample collection to prevent sample degradation. 0.5 TIU per ml of sample solution.

SAMPLE PREPARATION

Mouse plasma samples may require 4-8 fold dilution.

A suggested 4-fold dilution is 60 µL sample + 180 µL Dilution Buffer (DB08B). A suggested 8-fold dilution is 30 µL sample + 210 µL Dilution Buffer (DB08B).

Mouse serum samples may require 10-20 fold dilution. A suggested 10-fold dilution is 24 µL sample + 216 µL Dilution Buffer (DB08B). A suggested 20-fold dilution is 12 µL sample + 228 µL Dilution Buffer (DB08B).

Rat plasma or serum samples DO NOT need to be diluted.

Optimal dilutions should be determined by each laboratory for each application.

Use polypropylene test tubes.

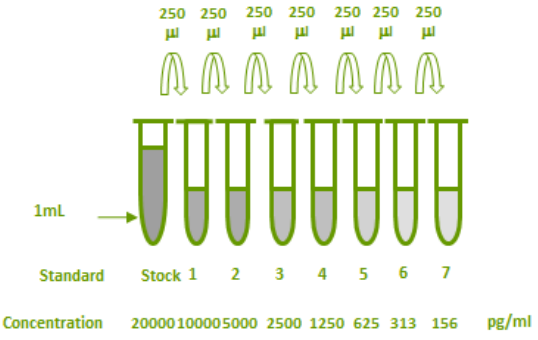
REAGENT PREPARATION

Bring all reagents to room temperature before use.

Wash Buffer - If crystals have formed in the concentrate, warm to room temperature and mix gently until the crystals have completely dissolved. Dilute 50 mL of Wash Buffer Concentrate into deionized or distilled water (450 mL) to prepare 500 mL of 1x Wash Buffer.

Eosinophil Cationic Protein (ECP) Standard - Reconstitute the ECP standard with 1.0 mL of Dilution Buffer. This reconstitution produces a stock solution of 20000 pg/mL. Allow the standard to sit for a minimum of 15 minutes with gentle agitation prior to making dilutions. Pipette 250 µL of Dilution Buffer into tubes #1 to #7. Use the stock solution (20000 pg/mL) to produce a dilution series (below). Mix each tube thoroughly before the next transfer. The **10000 pg/mL standard** serves as the high standard. The Dilution Buffer (DB08B) serves as the zero standard (0 pg/mL).

TUBE	STANDARD	DILUTION BUFFER	CONCENTRATION
stock	powder	1 ml	20000 pg/ml
# 1	250µl of stock	250µl	10000 pg/ml
# 2	250µl of 1	250µl	5000 pg/ml
# 3	250µl of 2	250µl	2500 pg/ml
# 4	250µl of 3	250µl	1250 pg/ml
# 5	250µl of 4	250µl	625 pg/ml
# 6	250µl of 5	250µl	313 pg/ml
# 7	250µl of 6	250µl	156 pg/ml



Positive Control - Reconstitute the Positive Control with 1 mL of Dilution Buffer to prepare working solution.

Detection Antibody Concentrate - Reconstitute the Detection Antibody Concentrate with 1.2 mL of Dilution Buffer to produce a 10-fold concentrated stock solution. Transfer 1.05 mL of 10-fold concentrated stock solution to 9.45 mL of Dilution Buffer to prepare working solution.

Streptavidin-HRP Conjugate - Transfer 120 µl of 100-fold concentrated Streptavidin-HRP conjugate stock solution to 11.88 mL of Dilution Buffer to prepare working solution **(protect from light)**. The working solution of Streptavidin-HRP Conjuate should be freshly prepared and used within 2 hours.

ELISA PROTOCOL

Bring all reagents and samples to room temperature before the start of the assay. Blank, standard dilutions, positive control and samples should be assayed in duplicate. ELISA Protocol may need further optimization.

1. Prepare all reagents and working standards as directed in the previous sections.
2. Add 100 µL per well of Dilution Buffer to Blank wells.
3. Add 100 µL of Standard solutions from #7 to #1 (reverse order of serial dilution), sample, or positive control per well. Cover with plate sealer. Incubate for 2 hours on microplate shaker at room temperature.
4. Aspirate each well and wash, repeating the process three times for a total of four washes. Wash by filling each well with 1x Wash Buffer (300 µL) using a squirt bottle, manifold dispenser, or autowasher. Complete removal of liquid at each step is essential to 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.
5. Add 100 µL of Detection Antibody working solution to each well. Cover with plate sealer. Incubate for 2 hours on microplate shaker at room temperature.
6. Repeat the aspiration/wash as in step 4.
7. Add 100 µL of Streptavidin-HRP Conjugate working solution to each well. Incubate for 60 minutes on microplate shaker at room temperature. **Protect from light.**
8. Repeat the aspiration/wash as in step 4.
9. Add 100 µL of Substrate Solution to each well. Incubate for 4-7 minutes on microplate shaker at room temperature. **Protect from light.**
10. Add 100 µL of Stop Solution to each well. The color in the wells should change from blue to yellow. If the color in the wells is green, or if the color change does not appear uniform, gently tap the plate to ensure thorough mixing.
11. Determine the optical density of each well using a microplate reader set to 450 nm within 3 min.

CALCULATION OF RESULTS

Create a standard curve by plotting the log of the known concentrations of the standard dilutions (x-axis) versus the log of its corresponding O.D. (y-axis) and draw the best fit line through the points. It is recommended to use computer software capable of generating a log-log curve fit to more accurately quantify the standard dilutions.

If samples have been diluted, the concentration read from the standard curve must be multiplied by the dilution factor.

TYPICAL DATA

This standard curve is provided for demonstration only. A new standard curve should be generated for each set of samples assayed.

STANDARD (PG/ML)	AVERAGE OD450NM (CORRECTED*)
Blank	0 (0.137)
156	0.041
313	0.098
625	0.199
1250	0.409
2500	0.899
5000	1.649
10000	2.679

SPECIFICITY

PROTEIN NAME	CROSS-REACTIVITY (%)
Mouse ECP	100
Human ECP	0
Mouse Periostin	0
Rat SPARC	0
Rat NGAL	0

Data also indicates that rat EDTA plasma and serum samples can bind to the antibody that was used in the formulation of this kit. The linear dilution curves were parallel to the standard curves obtained using the ELISA standard, which means rat EDTA plasma and serum samples cross-react with mouse Eosinophil Cationic Protein (ECP) ELISA kit.

PREPARE REAGENTS, SAMPLES AND STANDARDS
↓
Add 100 µl of standard dilutions, samples, or positive control to the well. Incubate 2 hours on plate shaker at RT.
↓
Aspirate and wash 4 times.
↓
Add 100 µl Detection Antibody working solution to each well. Incubate 2 hours on the plate shaker at RT.
↓
Aspirate and wash 4 times.
↓
Add 100 µl Streptavidin-HRP conjugate working solution to each well. Incubate 60 min on the plate shaker at RT. **Protect from light.**
↓
Aspirate and wash 4 times.
↓
Add 100 µl Substrate Solution to each well. Incubate 4 -7 min on the plate shaker at RT. **Protect from light.**
↓
Add 100 µl Stop Solution to each well. Read at 450nm within 3 min.

SUMMARY OF ASSAY PROCEDURE