Technical Manual

Mouse PLA2G7 PharmaGenie ELISA Kit

- **Catalogue Code: SBRS1505**
- **Sandwich Principle**
- **Research Use Only**

Contents

Key Features and Sample Types

Aliases:

Platelet-activating factor acetylhydrolase (PAF acetylhydrolase) (EC 3.1.1.47) (1-alkyl-2-acetylglycerophosphocholine esterase) (2-acetyl-1-alkylglycerophosphocholine esterase) (LDL-associated phospholipase A2) (LDL-PLA(2)) (PAF 2-acylhydrolase)

Gene ID:

27226

Uniprot:

Q60963

Detection Method:

Sandwich-based (Quantitative)

Range:

0.04 ng/ml - 12 ng/ml

Sensitivity:

0.04 ng/ml

Sample Types:

Cell Culture Supernatants, Plasma, Serum

Reactivity:

Mouse

Storage & Expiry

The entire kit may be stored at -20°C for up to 6 months from the date of shipment. Avoid repeated freeze-thaw cycles. For extended storage, it is recommended to store at -80°C. For prepared reagent storage, see table below.

Introduction

How do our ELISA kits work?

The Assay Genie Mouse PLA2G7 ELISA (Enzyme-Linked Immunosorbent Assay) kit is an in vitro enzyme-linked immunosorbent assay for the quantitative measurement of mouse PLA2G7 in serum, plasma, and cell culture supernatants. This assay employs an antibody specific for mouse PLA2G7 coated on a 96-well plate. Standards and samples are pipetted into the wells and PLA2G7 present in a sample is bound to the wells by the immobilized antibody. The wells are washed and biotinylated anti-mouse PLA2G7 antibody is added. After washing away unbound biotinylated antibody, HRP-conjugated streptavidin is pipetted to the wells. The wells are again washed, a TMB substrate solution is added to the wells and color develops in proportion to the amount of PLA2G7 bound. The Stop Solution changes the color from blue to yellow, and the intensity of the color is measured at 450 nm.

Kit Contents

Each kit contains reagents for 96 assays including:

No.	Component	96-Well Kit	Storage
1	Microplate coated with anti-Mouse PLA2G7	8 x 12	1 month at 4°C*
2	Wash Buffer Concentrate (20X)	25ml	1 month at 4°C*
3	Standard Protein	2 vials	1 week at -80°C
4	Detection Antibody PLA2G7	2 vials	5 days at 4°C
5	HRP-Streptavidin Concentrate (200X)	200µl	Do not store and reuse.
6	TMB One-Step Substrate Reagent	12ml	N/A
7	Stop Solution	8ml	N/A
8	Assay Diluent (5X concentrated buffer)	15 ml	1 month at 4°C

*Return unused wells to the pouch containing desiccant pack, reseal along entire edge.

Additional materials required:

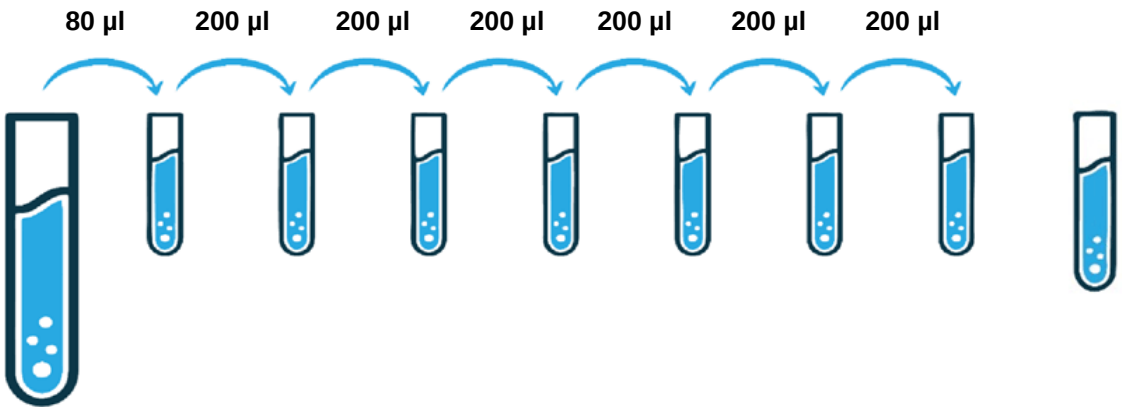
1. Microplate reader capable of measuring absorbance at 450 nm.
2. Precision pipettes to deliver 2 µl to 1 ml volumes.
3. Adjustable 1-25 ml pipettes for reagent preparation.
4. 100 ml and 1 liter graduated cylinders.
5. Absorbent paper.
6. Distilled or deionized water.
7. Log-log graph paper or computer and software for ELISA data analysis.
8. Tubes to prepare the positive control or sample dilutions.

Reagent Preparation

1. Bring all reagents and samples to room temperature (18 - 25°C) before use.
2. Assay Diluent should be diluted 5-fold with deionized or distilled water before use.
3. 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 600 fold.

   Note: Levels of PLA2G7 may vary between different samples. Optimal dilution factors for each sample must be determined by the investigator.
4. Preparation of standard: Briefly spin a vial of Standard Protein. Add 400 µl 1X Assay Diluent (Assay Diluent should be diluted 5-fold with deionized or distilled water before use) into Standard Protein vial to prepare a 75 ng/ml standard solution. Dissolve the powder thoroughly by a gentle mix. Add 80 µl of PLA2G7 standard solution from the vial of Standard Protein, into a tube with 420 µl 1X Assay Diluent to prepare a 12 ng/ml standard solution. Pipette 300 µl 1X Assay Diluent into each tube. Use the 12 ng/ml standard solution to produce a dilution series (shown below). Mix each tube thoroughly before the next transfer. 1X Assay Diluent serves as the zero standard (0 ng/ml).

DILUTION SERIES



		Std1	Std2	Std3	Std4	Std5	Std6	Std7	Zero Standard
Diluent volume	**Standard Protein + 400 µl**	420 µl	300 µl	300 µl	300 µl	300 µl	300 µl	300 µl	300 µl
Conc.	**75 ng/ml**	12 ng/ml	4.800 ng/ml	1.920 ng/ml	0.768 ng/ml	0.307 ng/ml	0.123 ng/ml	0.049 ng/ml	0 ng/ml

5. 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.
6. Briefly spin the Detection Antibody 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 and used in step 5 of the Assay Procedure.
7. Briefly spin the HRP-Streptavidin concentrate vial and pipette up and down to mix gently before use, as precipitates may form during storage. HRP-Streptavidin concentrate should be diluted 500 with 1X Assay Diluent.

For example: Briefly spin the vial (HRP-Streptavidin Concentrate) and pipette up and down to mix gently. Add 20 µl of HRP-Streptavidin concentrate into a tube with 10 ml 1X Assay Diluent to prepare a 500-fold diluted HRP-Streptavidin solution (don't store the diluted solution for next day use). Mix well.

Assay Procedure

1. Bring all reagents and samples to room temperature (18 - 25°C) before use. It is recommended that all standards and samples be run at least in duplicate.
2. Label removable 8-well strips as appropriate for your experiment.
3. Add 100 µl of each standard (see Reagent Preparation step 3) and sample into appropriate wells. Cover wells and incubate for 2.5 hours at room temperature with gentle shaking.
4. Discard the solution and wash 4 times with 1X Wash Solution. Wash by filling each well with Wash Buffer (300 µl) using a multi-channel Pipette 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 1X prepared biotinylated antibody (Reagent Preparation step 6) to each well. Incubate for 1 hour at room temperature with gentle shaking.

6. Discard the solution. Repeat the wash as in step 4.
7. Add 100 µl of prepared Streptavidin solution (see Reagent Preparation step 7) to each well. Incubate for 45 minutes at room temperature with gentle shaking.
8. Discard the solution. Repeat the wash as in step 4.
9. Add 100 µl of TMB One-Step Substrate Reagent to each well. Incubate for 30 minutes at room temperature in the dark with gentle shaking.
10. Add 50 µl of Stop Solution to each well. Read at 450 nm immediately.

Assay Procedure Summary

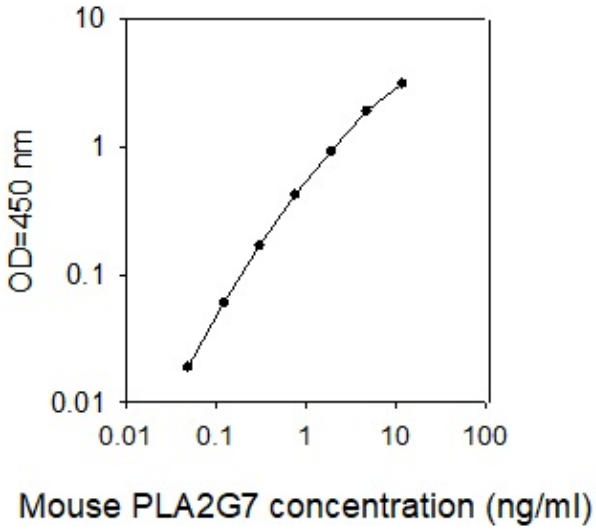
1. Prepare all reagents, samples and standards as instructed.
2. Add 100 µl standard or sample to each well. Incubate 2.5 hours at room temperature.
3. Add 100 µl prepared biotin antibody to each well. Incubate 1 hour at room temperature.
4. Add 100 µl prepared Streptavidin solution. Incubate 45 minutes at room temperature.
5. Add 100 µl TMB One-Step Substrate Reagent to each well. Incubate 30 minutes at room temperature.
6. Add 50 µl 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.

Typical Data

These standard curves are for demonstration only. A standard curve must be run with each assay.



Sensitivity

The minimum detectable dose of Mouse PLA2G7 was determined to be 0.04 ng/ml.

Minimum detectable dose is defined as the analyte concentration resulting in an absorbance that is 2 standard deviations higher than that of the blank (diluent buffer).

Spike and Recovery

Recovery was determined by spiking various levels of Mouse PLA2G7 into the sample types listed below. Mean recoveries are as follows:

Sample Type	Average % Recovery	Range (%)
Cell Culture Supernatants	109	0
Plasma	118	109-128
Serum	111	101-118

Linearity

Sample Type	Cell Culture Supernatants	Plasma	Serum
1:2 Average % of Expected	111	103	94
Range (%)	0	100-106	109-113
1:4 Average % of Expected	85	90	89
Range (%)	0	70-100	82-89

Reproducibility

Intra-Assay CV%: <10%

Inter-Assay CV%: <12%

Specificity

This ELISA antibody pair detects mouse PLA2G7. Other species not determined.

Troubleshooting

Problem	Causes	Solutions
Poor standard curve	• Inaccurate pipetting • Improper standard dilution	• Check pipettes • Briefly centrifuge Standard Protein and dissolve the powder thoroughly by gently mixing
Low signal	• Improper preparation of standard and/or biotinylated antibody • Too brief incubation times • Inadequate reagent volumes or improper dilution	• Briefly spin down vials before opening. Dissolve the powder thoroughly. • Ensure sufficient incubation time. Assay procedure step 3 may be done overnight at 4°C with gently shaking (note: may increase overall signals including background) • Check pipettes and ensure correct preparation
Large CV	• Inaccurate pipetting • Air bubbles in wells	• Check pipettes • Remove bubbles in wells
High background	• Plate is insufficiently washed • Contaminated wash buffer	• Review the manual for proper wash. If using a plate washer, ensure that all ports are unobstructed. • Make fresh wash buffer
Low sensitivity	• Improper storage of the ELISA kit • Stop solution	• Store your standard at <-70°C after reconstitution, others at 4°C. Keep substrate solution protected from light. • Add stop solution to each well before reading plate

Assay Genie 100% money-back guarantee!

If you are not satisfied with the quality of our products and our technical team cannot resolve your problem, we will give you 100% of your money back.

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