

APD851Mu01 100µg
Active Phospholipase A2 Receptor 1 (PLA2R1)
Organism Species: *Mus musculus* (Mouse)
Instruction manual

FOR RESEARCH USE ONLY
NOT FOR USE IN CLINICAL DIAGNOSTIC PROCEDURES

13th Edition (Revised in Aug, 2023)

[PROPERTIES]

Source: Prokaryotic expression.

Host: *E. coli*

Residues: Trp1418~Pro1487

Tags: N-terminal His and GST Tag

Purity: >90%

Endotoxin Level: <1.0EU per 1µg (determined by the LAL method).

Buffer Formulation: PBS, pH7.4, containing 0.01% Sarcosyl, 5%Trehalose .

Original Concentration: 200µg/mL

Applications: Activity Assays.

(May be suitable for use in other assays to be determined by the end user.)

Predicted isoelectric point: 6.4

Predicted Molecular Mass: 38.0kDa

Accurate Molecular Mass: 42kDa as determined by SDS-PAGE reducing conditions.

Phenomenon explanation:

The possible reasons that the actual band size differs from the predicted are as follows:

1. Splice variants: Alternative splicing may create different sized proteins from the same gene.
2. Relative charge: The composition of amino acids may affects the charge of the protein.
3. Post-translational modification: Phosphorylation, glycosylation, methylation etc.
4. Post-translation cleavage: Many proteins are synthesized as pro-proteins, and then cleaved to give the active form.
5. Polymerization of the target protein: Dimerization, multimerization etc.

[USAGE]

Reconstitute in 10mM PBS (pH7.4) to a concentration of 0.1-1.0 mg/mL. Do not vortex.

[STORAGE AND STABILITY]

Storage: Avoid repeated freeze/thaw cycles.

Store at 2-8°C for one month.

Aliquot and store at -80°C for 12 months.

Stability Test: The thermal stability is described by the loss rate. The loss rate was determined by accelerated thermal degradation test, that is, incubate the protein at 37°C for 48h, and no obvious degradation and precipitation were observed. The loss rate is less than 5% within the expiration date under appropriate storage condition.

[SEQUENCE]

WIY KQKSDIFQRL TGRGSYYPT LNFSTAHLEE
NILISDLEKN TNDEEVRDAP ATESKRGHKG RPICISP

[ACTIVITY]

Phospholipase A2 Receptor 1 (PLA2R1) is a type I transmembrane glycoprotein belonging to the mannose receptor family, primarily expressed on human podocytes. It serves as the specific receptor for secretory phospholipase A2 (sPLA2) and plays crucial roles in phospholipid metabolism and cellular signaling. Structurally, it contains an extracellular region with multiple functional domains including a cysteine-rich domain, fibronectin type II domain, and eight C-type lectin-like domains. Discovered as the major autoantigen in primary membranous nephropathy (accounting for 70-80% of cases), anti-PLA2R1 antibodies have become key diagnostic markers. Beyond nephrology, PLA2R1 is involved in various biological processes including inflammation, cell proliferation and apoptosis. Besides, Cytosolic Phospholipase A2 (PLA2G4) has been identified as an interactor of PLA2R1, thus a functional binding ELISA assay was conducted to

detect the interaction of recombinant mouse PLA2R1 and recombinant human PLA2G4 .Briefly, biotin-linked PLA2R1 were diluted serially in PBS, with 0.01% BSA (pH 7.4). Duplicate samples of 100 μ l were then transferred to PLA2G4-coated microtiter wells and incubated for 1h at 37 $^{\circ}$ C . Wells were washed with PBST 3 times and incubation with Streptavidin-HRP for 30min, then wells were aspirated and washed 5 times. With the addition of substrate solution, wells were incubated 15-25 minutes at 37 $^{\circ}$ C . Finally, add 50 μ l stop solution to the wells and read at 450nm immediately. The binding activity of recombinant mouse PLA2R1 and recombinant human PLA2G4 was shown in Figure 1, the EC50 for this effect is 0.11 μ g/mL.

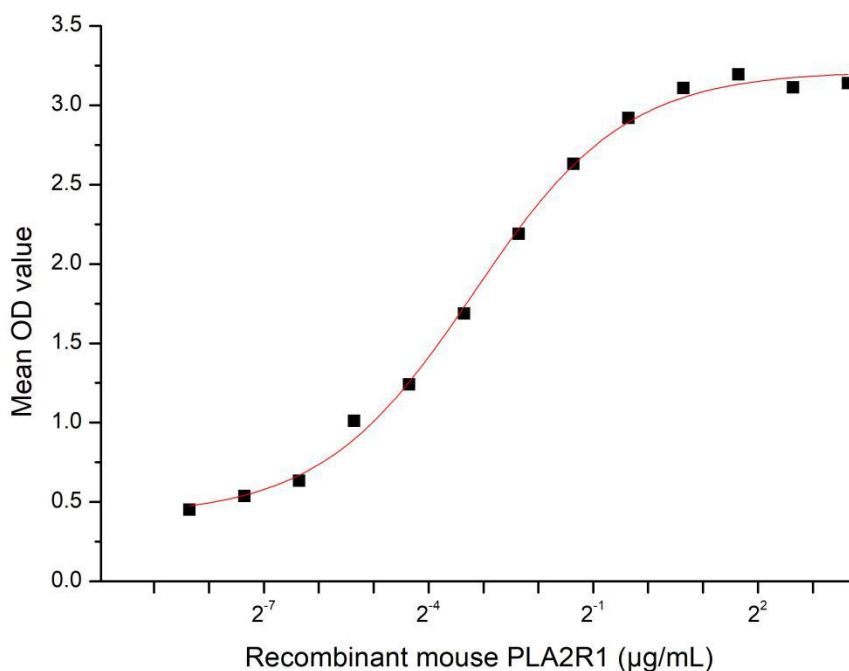


Figure 1. The binding activity of recombinant mouse PLA2R1 and recombinant human PLA2G4

 S A A T T C G G A T A T A G C G A M M G T G C A T C T T C G A G A C T C G G G G T C T G G G G T T C T C T A C C C C A C T C A C T T C G C A C A T T T A G M G A G M A C T T C A T T T C T G A C T G T G A M C C A A T G A T G A G A G T T G A G A T C T C C G C T C A G A G A C A A A G A G C C C A A A G C C C G T C T A T C T G

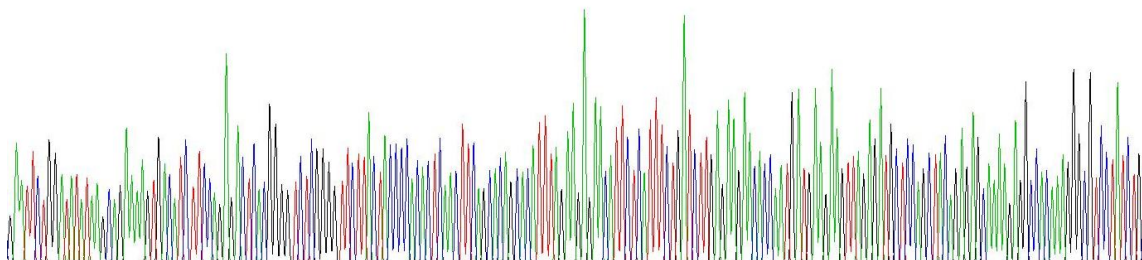


Figure 2. Gene Sequencing (extract)

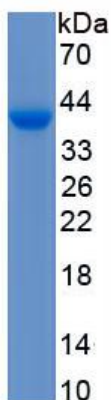


Figure 3. SDS-PAGE

Sample: Active recombinant PLA2R1, Mouse

[IMPORTANT NOTE]

The kit is designed for research use only, we will not be responsible for any issue if the kit was used in clinical diagnostic or any other procedures.