

APJ551Mu01 100µg

Active Biliverdin Reductase A (BLVRA)

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: Thr3~Lys294

Tags: N-terminal His-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: 7.0

Predicted Molecular Mass: 36.9kDa

Accurate Molecular Mass: 37kDa as determined by SDS-PAGE reducing conditions.

[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]

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TEPKRKFGVVVGVGRAGSVRIRDLKDPHSSAFLNLIGYVSRRELGSLDNVRQISLEDALRSQEV  
DVAYICTESSSHEDYIRQLQAGKHVLVEYPMALSFAAAQELWELAAQKGRVLHEEHIELLMEE  
FEFLKREVAGKELLKGLRFTASPLEEEKFGFPAFSGISRLTWLVSLFGELSLISATMENRKEDQYM  
KMTVQLETQNKSPLSWIEEKGPGLKRNHRHISIHFKSGSLEEVPNVGVNKNIFLKDQDIFIQKLLG  
QVSAEDLAAEKKRILHCLELASDIQRLCHRK
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[ACTIVITY]

Biliverdin Reductase A (BLVRA) is a crucial cytoplasmic enzyme involved in the heme catabolism pathway. It specifically catalyzes the reduction of biliverdin (a green tetrapyrrole pigment) to bilirubin (a yellow antioxidant) using NADPH as a cofactor. Beyond this primary metabolic role, BLVRA exhibits potent antioxidant and anti-inflammatory properties by scavenging reactive oxygen species (ROS) and modulating key signaling pathways like NF- κ B. It plays protective roles in oxidative stress-related conditions, including cardiovascular diseases, neurodegenerative disorders, and diabetes. BLVRA's pleiotropic functions make it a significant player in cellular defense mechanisms against oxidative damage. Besides, Biliverdin Reductase B (BLVRB) has been identified as an interactor of BLVRA, thus a functional binding ELISA assay was conducted to detect the interaction of recombinant mouse BLVRA and recombinant human BLVRB. Briefly, BLVRA was diluted serially in PBS with 0.01% BSA (pH 7.4). Duplicate samples of 100 μ l were then transferred to BLVRB-coated microtiter wells and incubated for 1h at 37°C. Wells were washed with PBST and incubated for 1h with anti-BLVRA pAb, then aspirated and washed 3 times. After incubation with HRP labelled secondary antibody for 1h at 37°C, wells were aspirated and

washed 5 times. With the addition of substrate solution, wells were incubated 15-25 minutes at 37 °C . Finally, add 50 µL stop solution to the wells and read at 450/630nm immediately. The binding activity of recombinant mouse BLVRA and recombinant human BLVRB was shown in Figure 1, the EC₅₀ for this effect is 0.121µg/mL.

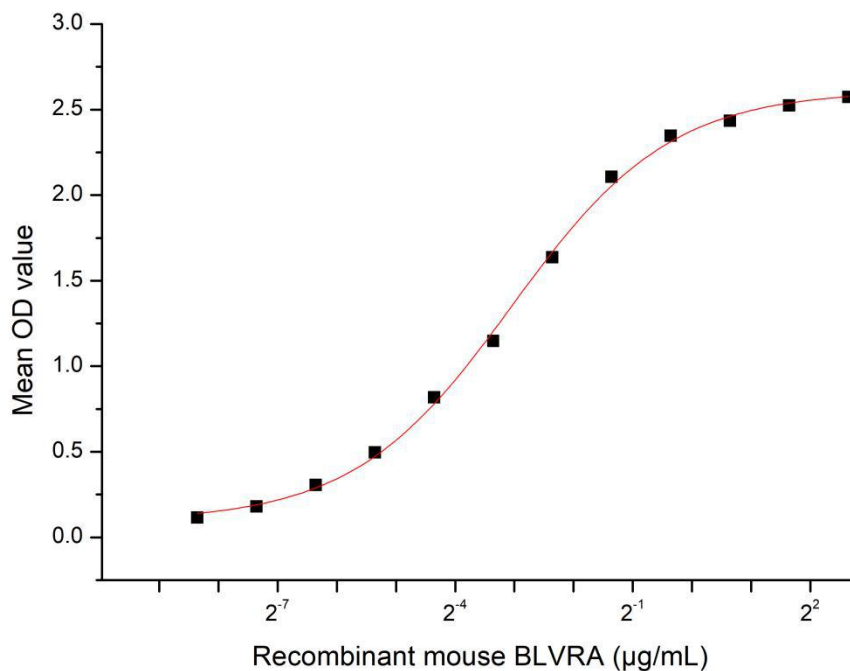


Figure 1. The binding activity of recombinant mouse BLVRA and recombinant human BLVRB

[IDENTIFICATION]

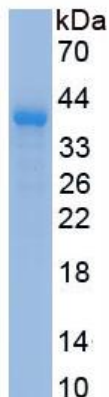


Figure 2. SDS-PAGE

Sample: Active recombinant BLVRA, 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.