

**APB728Mu03 100µg**  
**Active Bone Morphogenetic Protein 9 (BMP9)**  
**Organism Species: *Mus musculus (Mouse)***  
***Instruction manual***

FOR RESEARCH USE ONLY  
NOT FOR USE IN CLINICAL DIAGNOSTIC PROCEDURES

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13th Edition (Revised in Aug, 2023)

## **[ PROPERTIES ]**

**Source:** Prokaryotic expression.

**Host:** *E. coli*

**Residues:** Ser319~Arg428

**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:** 6.5

**Predicted Molecular Mass:** 15.9kDa

**Accurate Molecular Mass:** 16kDa 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.

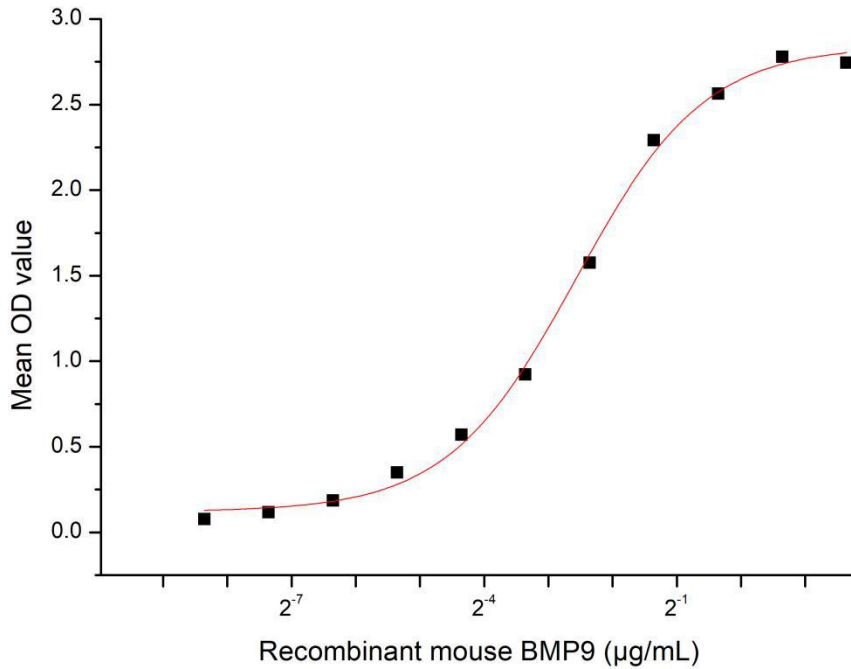
**Stability Test:** The thermal stability is described by the loss rate. The loss rate was determined by accelerated thermal degradation test, that is, incubate the protein at 37°C for 48h, and no obvious degradation and precipitation were observed. The loss rate is less than 5% within the expiration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

## **[ SEQUENCE ]**

STGASSHCQKTSLRVNFEDIGWDSWIIAPKEYDAYECKGGCFFPLADDVTPTKHAIVQTL  
VHLEFPTKVGKACCVPTKLSPI SILYKDDMGVPTLKYHYEGMSVAECGCR

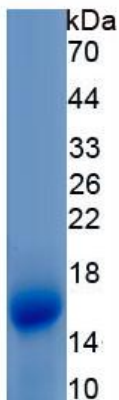
## **[ ACTIVITY ]**

Bone Morphogenetic Protein 9 (BMP9), a member of the Transforming Growth Factor Beta(TGF- $\beta$ ) superfamily, is predominantly expressed in the liver and endothelial cells. It exerts pivotal roles in regulating angiogenesis, glucose metabolism, and bone formation. As a multifunctional cytokine, BMP9 transmits signals via type I and type II serine/threonine kinase receptors on the cell surface, thereby modulating a variety of physiological and pathological processes. Notably, it binds to Activin A Receptor Type II A (ACVR2A) with high affinity, which initiates downstream SMAD-dependent signaling pathways. Thus a functional binding ELISA assay was conducted to detect the interaction of recombinant mouse BMP9 and recombinant human ACVR2A. Briefly, biotin-linked BMP9 were diluted serially in PBS, with 0.01% BSA (pH 7.4). Duplicate samples of 100 $\mu$ l were then transferred to ACVR2A-coated microtiter wells and incubated for 1h at 37°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 °C. Finally, add 50 $\mu$ l stop solution to the wells and read at 450nm immediately. The binding activity of recombinant mouse BMP9 and recombinant human ACVR2A was shown in Figure 1, the EC50 for this effect is 0.17 $\mu$ g/mL.



**Figure 1. The binding activity of recombinant mouse BMP9 and recombinant human ACVR2A**

**[ IDENTIFICATION ]**



**Figure 2. SDS-PAGE**

**Sample: Active recombinant BMP9, 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.