

**APG329Mu61 100µg**  
**Active Sex Determining Region Y Box Protein 9 (SOX9)**  
**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:** Eukaryotic expression.

**Host:** 293F cell

**Residues:** Met1~Pro507

**Tags:** N-terminal His-tag

**Purity:** >80%

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

**Buffer Formulation:** PBS, pH7.4, containing 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:** 6.8

**Predicted Molecular Mass:** 57.7kDa

**Accurate Molecular Mass:** 70&50&40&35kDa 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.

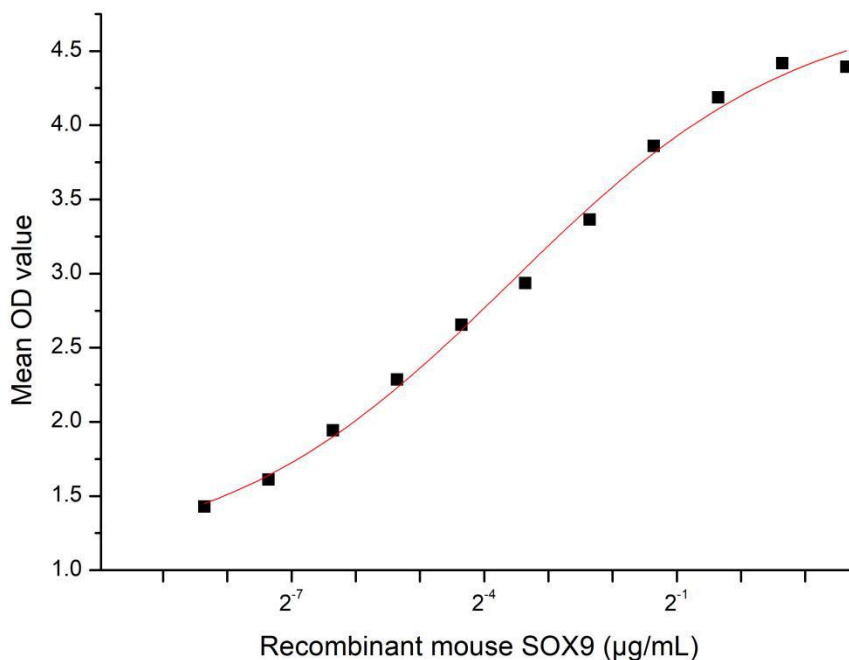
## **[ SEQUENCE ]**

MNLLDPFMKMTDEQEKGSLGAPSPPTMSEDSAGSPCPSGSGSDTENTRPQEN  
TFPKGEPDLKKESEEDKFPVCIREAVSQVLKGYDWTLVPMMPVRVNGSSKNKPH  
VKRPMNAFMVWAQAARRKLADQYPHLHNAELSKTLGKLWRLNESEKRPFV  
EEAERLRVQHKKDHPDYKYQPRRRKSVKNGQAEAEATEQTHISPNAIFKALQ  
ADSPHSSSGMSEVHSPGEHSGQSQGPPTPPTPKTDVQAGKVDLKREGRPL  
AEGGRQPPIDFRDVDIGELSSDVISNIETFDVNEFDQYLPPNGHPGVPATHGQ  
VTTYGSYGISSTAPTPATAGHVWMSKQQAPPPPPQQPPQAPQAPQAPPQQ  
QAPPQQPQAPQQQQAHTLTLSSEPGQSQRTHIKTEQLSPSHYSEQQQHSP  
QQISYSPFNLPHYSPSYPPITRSQYDYADHQNSGSYYSHAAGQGSGLYSTFTY  
MNPAQRPMYTPADTSGVPSIPQTHSPQHWEPVYTQLTRP

## **[ ACTIVITY ]**

Sex Determining Region Y Box Protein 9 (SOX9) is a transcription factor belonging to the SOX (SRY-related HMG-box) family, which plays crucial roles in embryonic development, cell differentiation, and tissue homeostasis. It is essential for chondrogenesis, male sex determination, and the maintenance of various progenitor cell populations. SOX9 regulates the expression of target genes by

binding to specific DNA sequences, influencing pathways such as Wnt/  $\beta$  -catenin and TGF-  $\beta$  . Besides, Fibroblast Growth Factor 9 (FGF9) has been identified as an interactor of SOX9, thus a functional binding ELISA assay was conducted to detect the interaction of recombinant mouse SOX9 and recombinant human FGF9. Briefly, SOX9 was diluted serially in PBS with 0.01% BSA (pH 7.4). Duplicate samples of 100  $\mu$  l were then transferred to FGF9-coated microtiter wells and incubated for 1h at 37  $^{\circ}$  C . Wells were washed with PBST and incubated for 1h with anti-SOX9 pAb, then aspirated and washed 3 times. After incubation with HRP labelled secondary antibody for 1h at 37  $^{\circ}$  C , 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  $\mu$  L stop solution to the wells and read at 450/630nm immediately. The binding activity of recombinant mouse SOX9 and recombinant human FGF9 was shown in Figure 1, the EC<sub>50</sub> for this effect is 0.08 $\mu$ g/mL.



**Figure 1. The binding activity of recombinant mouse SOX9 and recombinant human FGF9**

