

**APP949Hu01 100µg**

**Active Homeobox Protein D12 (HOXD12)**

**Organism Species: *Homo sapiens* (Human)**

***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:** Met1~Tyr270

**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:** 10.3

**Predicted Molecular Mass:** 32.7kDa

**Accurate Molecular Mass:** 36kDa 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.

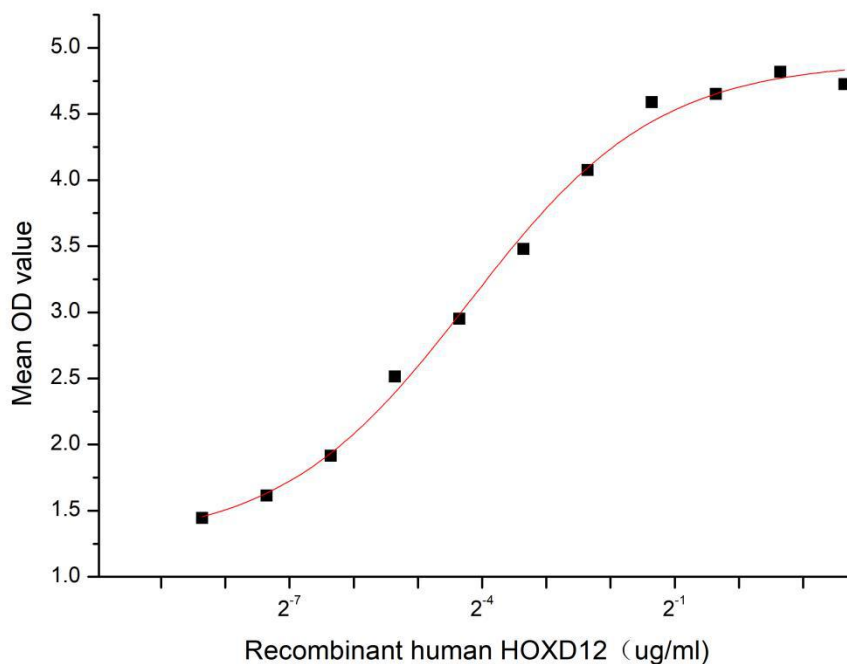
## **[ SEQUENCE ]**

MCERSLYRAGYVGSLNLQSPDSFYFSNLRPNGGQLAALPPISYPRGALPWAA  
TPASCAPAQPAGATAFGGFSQPYLAGSGPLGLQPPTAKDGP EEQAKFYAPEAA  
AGPEERGRTRPSFAPESSLAPAVAALKA AKYDYAGVGRATPGSTTLLQGAPCAP  
GFKDDTKGPLNLNMTVQAAGVASCLRPSLPDGLPWGAAPGRARKKRKP YTK  
QQIAELENEFLVNEFINRQKRKELSNRLNLS DQQVKIWFQNR RMKKKRVLRE  
QALALY

## **[ ACTIVITY ]**

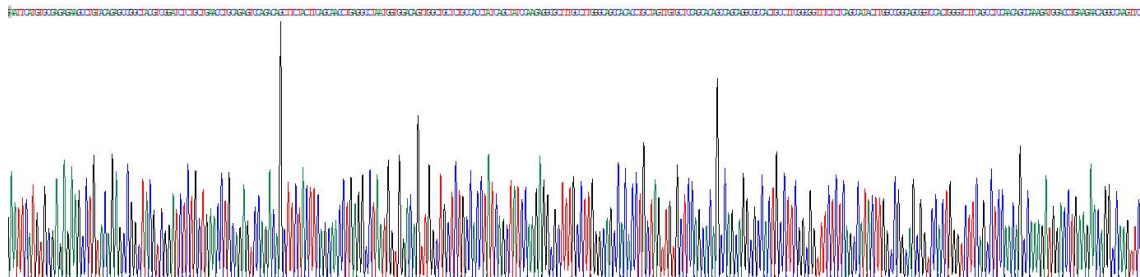
HoxD12 (homeobox D12) is a 275 amino acid protein that localizes to the nucleus and contains one homeobox DNA-binding domain. It plays a key role in embryonic limb development, which precisely controls the morphogenesis and pattern formation of bones and soft tissues in different parts of the limb. And it also can regulate the processes of cell differentiation and proliferation, during the differentiation of stem cells in certain tissues, the HOXD12 protein can guide cells to differentiate in a specific direction. It is reported that Hoxd-12 can bind to and transactivate the Shh promoter in vitro. Thus a functional binding ELISA assay was conducted to detect the interaction of recombinant human HOXD12 and recombinant human Shh. Briefly, biotin-linked HOXD12 were diluted serially in PBS, with 0.01% BSA (pH 7.4). Duplicate samples of 100  $\mu$ l were then transferred to Shh-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

HOXD12 and Shh was shown in Figure 1, the EC50 for this effect is 0.05ug/mL.

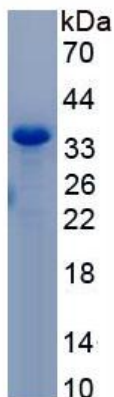


**Figure 1. The binding activity of recombinant human HOXD12 and recombinant human Shh**

## [ IDENTIFICATION ]



**Figure 2. Gene Sequencing (extract)**



**Figure 3. SDS-PAGE**

**Sample: Active recombinant HOXD12, Human**

### **[ 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.