

APP953Hu01 100µg

Active Homeobox Protein C13 (HOXC13)

Organism Species: *Homo sapiens* (Human)

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: Met1~Thr330

Tags: N-terminal His-tag

Purity: >80%

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: 9.2

Predicted Molecular Mass: 39.1kDa

Accurate Molecular Mass: 40kDa 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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MTTSLLLHPRWPESLMYVYEDSAAESGIGGGGGGGGGGTGGAGGGCSCGAS
PGKAPSMDGLGSSCPASHCRDLLPHPVLGRPPAPLGAPQGAVYTDIPAPEAA
RQCAPPAPPTSSSATLGYGYPFGGSYYGCRLSHNVNLQQKPCAYHPGDKYPE
PSGALPGDDLSSRAKEFAFYPSFASSYQAMPGYLDVSVVPGISGHPEPRHDAL
IPVEGYQHWALSNGWDSQVYCSKEQSQSAHLWKSPFPDVVPLQPEVSSYRR
GRKKRVPYTKVQLKELEKEYAASKFITKEKRRRISATTNLSEKQVTIWFQNRVK
EKKVVSKSKAPHLHST
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[ACTIVITY]

HOXC13 protein is a transcription factor encoded by the HOXC13 gene, which is part of the HOXC gene cluster within the homeobox gene family. It contains a highly conserved homeodomain, typically composed of around 60 amino acids. This domain is responsible for making specific contacts with the major groove of the DNA double - helix. This allows the HOXC13 protein to bind to specific DNA sequences in the regulatory regions (such as promoters and enhancers) of its target genes, thereby regulating their transcriptional activity. In embryonic development, HOXC13 is crucial for the proper development of the appendages, particularly the hair, nails, and the axial skeleton. It also plays a significant role in epithelial differentiation processes. Besides, Forkhead Box P3 (FOXP3) has been identified as an interactor of HOXC13, thus a functional binding ELISA assay was conducted to detect the interaction of recombinant human HOXC13 and recombinant human FOXP3. Briefly, biotin-linked HOXC13 were diluted serially in PBS, with 0.01% BSA (pH 7.4). Duplicate samples of 100 µl were then transferred to FOXP3-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 50µl stop solution to the wells and read at 450nm immediately. The binding activity of HOXC13 and FOXP3 was shown in Figure 1, the EC₅₀ for this effect is 0.80ug/mL.

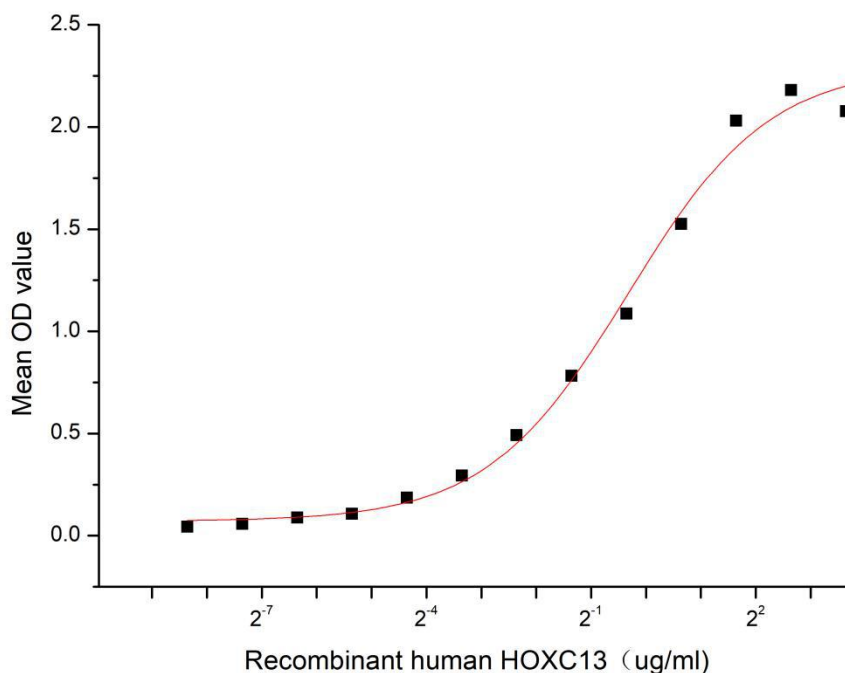


Figure 1. The binding activity of recombinant human HOXC13 and recombinant human FOXP3

[IDENTIFICATION]

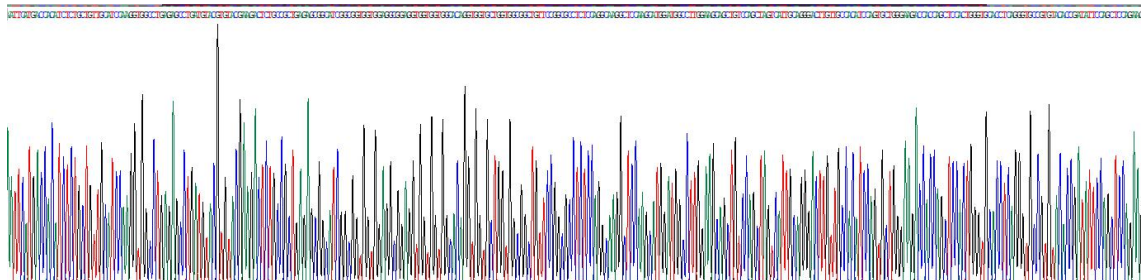


Figure 2. Gene Sequencing (extract)

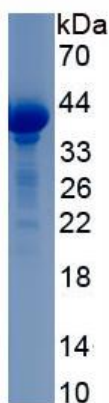


Figure 3. SDS-PAGE

Sample: Active recombinant HOXC13, 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.