

APC124Hu01 100µg
Active Mothers Against Decapentaplegic Homolog 2 (Smad2)
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: Trp274~Ser467

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: 8.1

Predicted Molecular Mass: 23.1kDa

Accurate Molecular Mass: 26kDa 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]

WCSIAYYELNQRVGETFHASQPSLTVDGFTDPSNSERFCLGLLSNVNRNATVEM
TRRHIGRGVRLYYIGGEVFAECLSDSAIFVQSPNCNQRYGWHPATVCKIPPGCNL
KIFNNQEFAALLAQSVNQGFQAVYQLTRMCTIRMSFVKGWGAEYRRQTVTSTPC
WIELHLNGPLQWLDKVLTMGSPSVRCSSMS

[ACTIVITY]

Mothers Against Decapentaplegic Homolog 2 (Smad2) is a pivotal intracellular mediator of the TGF- β signaling pathway that regulates diverse cellular processes including proliferation, differentiation, and apoptosis. As an R-Smad protein, Smad2 transduces signals from activated TGF- β receptors to the nucleus, where it modulates gene expression in complex with Smad4. Smad2 is essential for embryonic development and tissue homeostasis, with its dysfunction linked to cancer and fibrotic diseases. Following TGF- β stimulation, Smad2 binds to and is phosphorylated by the activated Transforming Growth Factor Beta Receptor I (TGF β R1), initiating downstream signaling cascades. To detect the activity of recombinant Smad2, a functional ELISA assay was performed to evaluate the interaction between recombinant human Smad2 and recombinant human TGF β R1. Briefly, biotin-linked Smad2 were diluted serially in PBS, with 0.01% BSA (pH 7.4). Duplicate samples of 100 μ l were then transferred to TGF β R1-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 μ l stop solution to the wells and read at 450nm immediately. The binding activity of Smad2 and TGF β R1 was

shown in Figure 1, the EC₅₀ for this effect is 0.77 µg/mL.

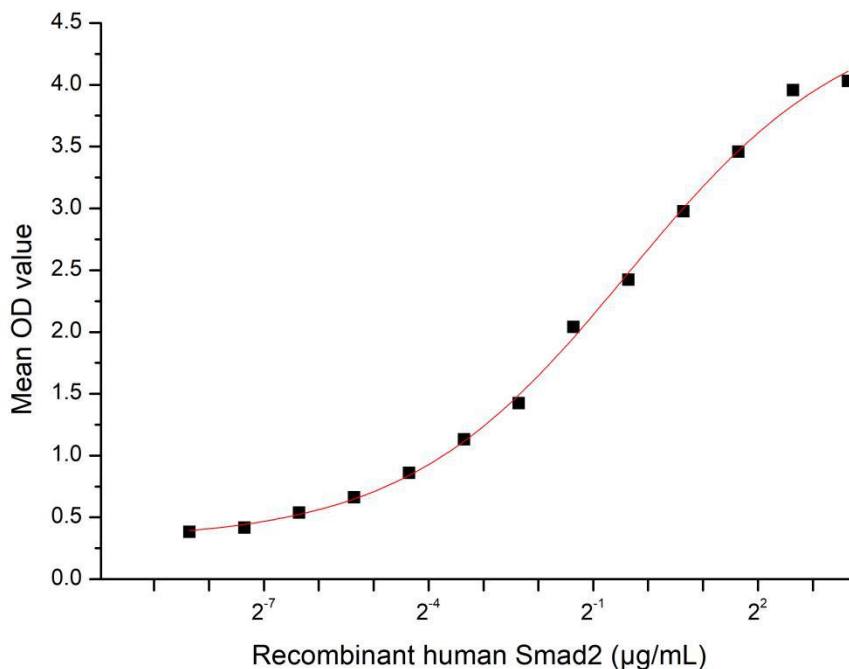


Figure 1. The binding activity of recombinant human Smad2 and recombinant human TGFbR1

[IDENTIFICATION]

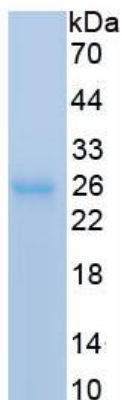


Figure 2. SDS-PAGE

Sample: Active recombinant Smad2, 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.