

APA899Bo61 100µg
Active Osteopontin (OPN)
Organism Species: *Bos taurus*; Bovine (Cattle)
Instruction manual

FOR RESEARCH USE ONLY
NOT FOR USE IN CLINICAL DIAGNOSTIC PROCEDURES

13th Edition (Revised in Aug, 2023)

[PROPERTIES]

Source: Eukaryotic expression.

Host: 293F cell

Residues: Leu17~Asn278

Tags: N-terminal His Tag and C-terminal Fc Region of Human IgG1

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: Cell culture; Activity Assays.

(May be suitable for use in other assays to be determined by the end user.)

Predicted isoelectric point: 4.2

Predicted Molecular Mass: 60.2kDa

Accurate Molecular Mass: 90kDa 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]

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LPVKPTSSGSSEEKQLNKNYPDAVATWLKPDPSQKQTF LAPQNSVSSEETDDNKQNTLP SKSNESPEQT  
DDLDDDDDNSQDVNSNDSDDAETTDDPDHSDESHHSDESDEVDFPTDIPTIAVFTPFIPTESANDGRGD  
SVAYGLKSRSKKFRRSNVQSPDATEEDFTSHIESEEMHDAPKKTSQLTDHSKETNSSELKELTPKAKD  
KNKHSNLI ESQENSKLSQEFHSLEDKLDLDHKSEEDKHLKIRI SHELDSASSEVN
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[ACTIVITY]

Osteopontin (OPN), also known as secreted phosphoprotein 1 (SPP1), is a highly conserved, multifunctional glycoprotein that plays pivotal roles in various physiological and pathological processes. Encoded by the SPP1 gene, this protein is characterized by its arginine-glycine-aspartic acid (RGD) motif, which enables it to interact with integrin receptors, facilitating cell adhesion, migration, and signaling. As OPN has the function of cell adhesion, we measure the activity of recombinant bovine OPN by the ability of the immobilized protein to support the adhesion of 293T cells. When cells are added to different concentrations of recombinant bovine OPN coated plates, cells will adhere after 2 hour incubation at 37 °C . The adhesion of 293T after 2 hour incubation at 37 °C observed by inverted microscope was shown in Figure 1. Cells adherent was in a dose dependent manner, the result was shown in Figure 2, the EC50 was 0.27 μ g/ml.



A

B

Figure 1. The adhere effect of recombinant bovine OPN on 293T cells

(A) 293T cells were seeded into the well coated with OPN at 0.625 $\mu\text{g/ml}$ and incubated for 2 h at 37 $^{\circ}\text{C}$;

(B) 293T cells were seeded into the well without OPN and incubated for 2 h at 37 $^{\circ}\text{C}$;

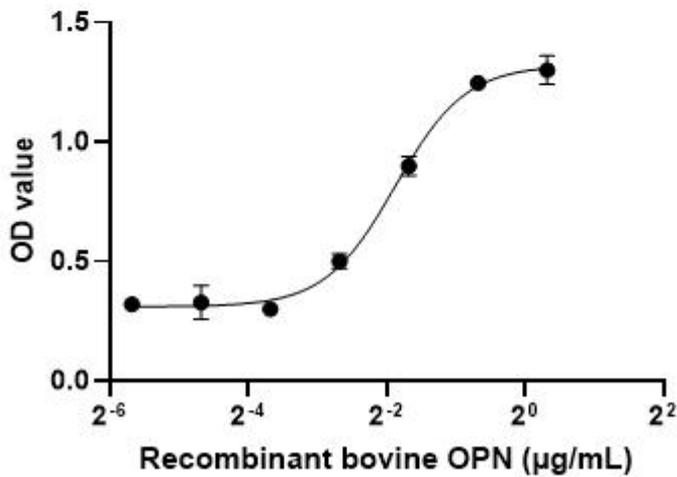


Figure 2. The dose-effect curve of recombinant bovine OPN on 293T cells

[IDENTIFICATION]

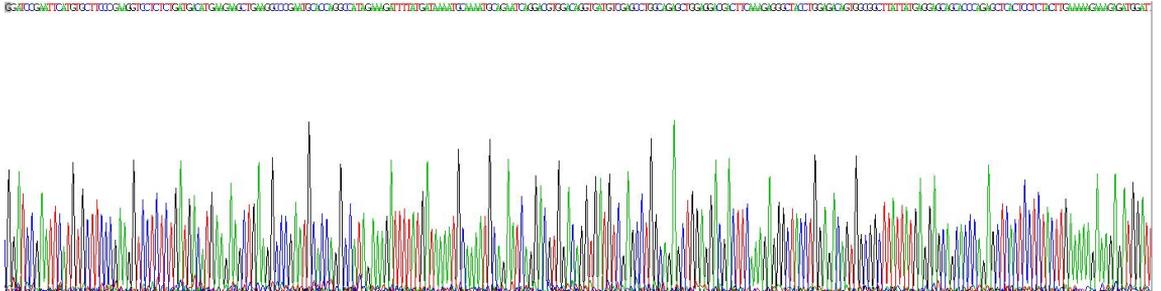


Figure 3. Gene Sequencing (extract)

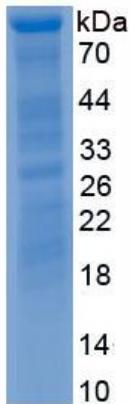


Figure 4. SDS-PAGE

Sample: Active recombinant OPN, Cattle

[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.