

APB092Hu62 100µg
Active Bone Sialoprotein (BSP)
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: Eukaryotic expression.

Host: 293F cell

Residues: Phe17~Gln317

Tags: Two N-terminal Tags, His-tag and SUMO-tag

Purity: >95%

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: 4.0

Predicted Molecular Mass: 46.6kDa

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]

```
          FSMK NLHRRVKIED SEENGVFKYR PRYYLYKHAY
FYPHLKRFPV QGSSDSSEEN GDSSEEEEE EEETSNEGEN NEESNEDEDS
EAENTTLSAT TLGYGEDATP GTGYTGLAAI QLPKKAGDIT NKATKEKESD
EEEEEEEEEGN ENEESEAEVD ENEQGINGTS TNSTEAENGN GSSGGDNGEE
GEEESVTGAN AEDTTETGRQ GKGTSKTTTS PNGGFPTTP PQVYRTTSP
FGKTTTVEYE GEYEYTGANE YDNGYEIYES ENGEPRGDNY RAYEDEYSYF
KGQGYDGYDG QNYYYHHQ
```

[ACTIVITY]

Bone Sialoprotein (BSP) is a highly glycosylated and phosphorylated non-collagenous protein that plays a pivotal role in mineralized tissues, particularly in bone and dentin. As a member of the small integrin-binding ligand N-linked glycoprotein (SIBLING) family, it is primarily synthesized by osteoblasts, odontoblasts, and chondrocytes, and is prominently localized in the extracellular matrix of mineralizing tissues. Additionally, it also has the function of cell adhesion. Therefore, we measure the activity of recombinant human BSP by the ability of the immobilized protein to support the adhesion of MCF-7 cell. When 5×10^4 cells/well are added to different concentrations of recombinant human BSP coated plates, cells will adhere after 2 hour incubation at 37 °C. The adhesion of MCF-7 after 2 hour incubation at 37 °C observed by inverted microscope was shown in Figure

1. Cell adherence was in a dose dependent manner, the result was shown in Figure 2, the EC₅₀ was 0.44 μ g/ml.

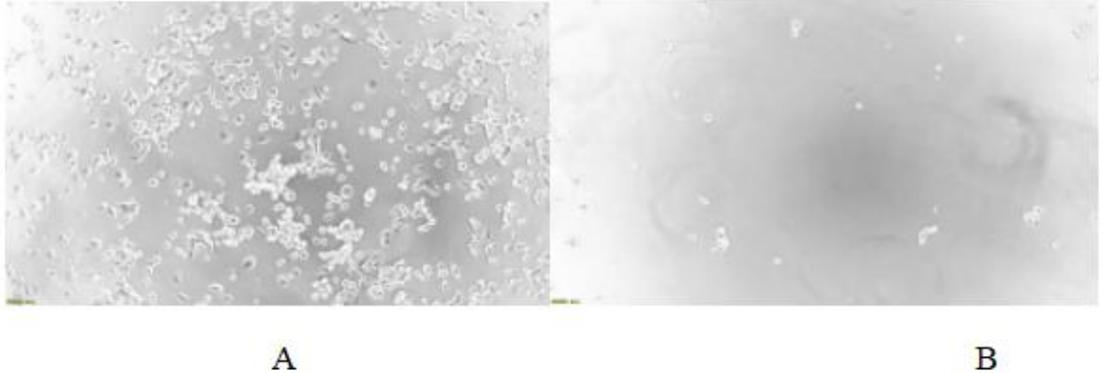


Figure 1. The adhere effect of recombinant human BSP on MCF-7 cells

(A) MCF-7 cells were seeded into the well containing BSP 1.25 μ g/ml and incubated for 2 h at 37 °C;

(B) MCF-7 cells were seeded into the well without BSP and incubated for 2 h at 37 °C;

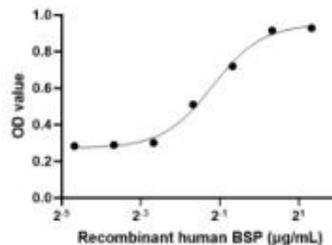


Figure 2. The dose-effect curve of recombinant human BSP on MCF-7 cells

