

DESCRIPTION

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|---------------------------|---|
| Species Reactivity | Human |
| Specificity | Detects human IBSP/Sialoprotein II in direct ELISAs and Western blots. |
| Source | Polyclonal Goat IgG |
| Purification | Antigen Affinity-purified |
| Immunogen | Chinese hamster ovary cell line CHO-derived recombinant human IBSP/Sialoprotein II Phe17-Gln317 Accession # AAC95490 |
| Formulation | Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS. |

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.

| | Recommended Concentration | Sample |
|---------------------|---------------------------|--|
| Western Blot | 0.1 µg/mL | Recombinant Human IBSP/Sialoprotein II (Catalog # 4014-SP) |

PREPARATION AND STORAGE

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|--------------------------------|---|
| Reconstitution | Reconstitute at 0.2 mg/mL in sterile PBS. |
| Shipping | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C |
| Stability & Storage | <p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution. |

BACKGROUND

IBSP (integrin-binding sialoprotein; also BSP or bone sialoprotein (II)) is a 55-75 kDa, secreted, variably glycosylated, monomeric noncollagenous member of the SIBLING family of extracellular matrix (ECM) proteins (1-3). It is principally associated with the early stages of bone mineralization. BSP is synthesized as a 317 amino acid (aa) precursor that contains a 16 aa signal sequence and a 301 aa mature region (4-6). The mature segment is divided into a basic N-terminus (aa 17-62), a central region (aa 63-233), and an acidic C-terminus (aa 234-317) (7).

Functional segments associated with the mature molecule include a type I collagen binding domain (aa 19-46), two non-RGD cell binding sites (aa 30-57 and 261-281), an RGD $\alpha_3\beta_3$ integrin-binding site (aa 286-288) and two potential hydroxyapatite (HAp) nucleation domains (aa 76-83 and 151-158) (3, 4, 8-11). HAp formation requires a BSP nucleation site composed of at least eight consecutive glutamic acid residues and, likely, a contribution from a BSP-associated co-nucleator (10, 12). BSP is highly glycosylated, sulfated, and phosphorylated. Phosphorylation may impact HAp growth, while carbohydrate may regulate cell adhesion (1, 3, 13). Mature human BSP is 70%, 72%, 78%, and 72% aa identical to porcine, rat, canine, and mouse BSP, respectively. BSP is synthesized by megakaryocytes/platelets, osteoblasts, osteocytes, odontoblasts, osteoclasts, and bone marrow stromal cells (14-17).

References:

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