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Anti-Osteopontin (RABBIT) Antibody

Osteopontin Antibody
Catalog # ASR3697

Specification

Anti-Osteopontin (RABBIT) Antibody - Product Information

Host	**Rabbit**
Conjugate	**Unconjugated**
Target Species	**Human**
Reactivity	**Human**
Clonality	**Polyclonal**
Application	**WB, IHC, E, IP, I, LCI**
Application Note	**Anti-Osteopontin has been tested for western blotting, immunohistochemistry (formalin-fixed paraffin-embedded sections) and ELISA. The antibody exclusively recognizes C-terminal fragments of both thrombin and MMP-cleaved OPN. The antibody recognizes the full-length osteopontin protein (which runs at 66 kDa on westerns), and 32 kDa for the MMP-cleaved C-fragment, but the 40 kDa N-terminal fragment is not recognized. A 1:1000 dilution will detect strongly approximately 250 ng of OPN protein on a blot. A 1:100-1:300 dilution used for IHC on human breast tumor tissues. No pretreatment is required for IHC when formalin-fixed paraffin-embedded tissue is stained. Specific conditions for reactivity and signal detection should be optimized by the end user.**
Physical State	**Liquid (sterile filtered)**
Buffer	**0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2**
Immunogen	**This whole rabbit serum was prepared by repeated immunizations with a synthetic peptide, from the human osteopontin protein, conjugated to KLH using maleimide.**
Preservative	**0.01% (w/v) Sodium Azide**

Anti-Osteopontin (RABBIT) Antibody - Additional Information

Gene ID 6696

Other Names
6696

Purity
Osteopontin is directed against human osteopontin. The antibody recognizes the full-length osteopontin protein (which runs at 66 kDa on westerns), as well as the C-terminal fragments of both thrombin and MMP-cleaved OPN. The 32 kDa MMP-cleaved C-fragment is recognized, but not the 40 kDa N-terminal fragment. Reactivity is reported to occur with osteopontin from swine, dog, mouse and rat.

Storage Condition
Store vial at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.

Precautions Note
This product is for research use only and is not intended for therapeutic or diagnostic applications.

Anti-Osteopontin (RABBIT) Antibody - Protein Information

Name SPP1

Synonyms BNSP, OPN

Function
Major non-collagenous bone protein that binds tightly to hydroxyapatite. Appears to form an integral part of the mineralized matrix. Probably important to cell-matrix interaction.

Cellular Location
Secreted

Tissue Location
Detected in cerebrospinal fluid and urine (at protein level) (PubMed:25326458, PubMed:36213313, PubMed:37453717) Bone. Found in plasma.

Anti-Osteopontin (RABBIT) Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Anti-Osteopontin (RABBIT) Antibody - Images

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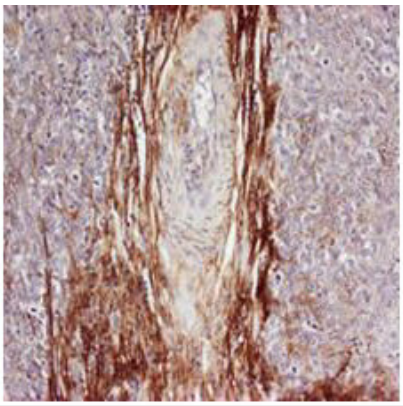

Rabbit anti-Osteopontin was used at a 1:100-1:300 dilution to detect osteopontin by immunohistochemistry. Osteopontin is a normal component of elastic fibers in the breast (shown heavily stained in this section of human breast tumor cells). There is also weak staining of the extracellular matrix. Osteopontin is not expressed in breast tumor cells, and there is no staining of the breast cells in this section. No antigen retrieval is required.

Anti-Osteopontin (RABBIT) Antibody - Background

Anti-Osteopontin Antibody recognizes Osteopontin (OPN) which is an arginine-glycine-aspartic acid (RGD)-containing glycoprotein that interacts with integrins and CD44 as major receptors. OPN is multifunctional, with activities in cell migration, cell survival, inhibition of calcification, regulation of immune cell function, and control of tumor cell phenotype. The gene encoding OPN is called spp1. Targeting this gene has revealed that while OPN is not necessary for normal embryonic development, fertility, and health under pathogen-free conditions, loss of the protein has significant consequences in several models of injury/disease as diverse as renal injury, viral, and bacterial infection, bone remodeling, and tumor growth. The fact that no other proteins seem to share a redundant activity with OPN under these conditions suggests that OPN has a unique functional role during tissue injury and stress. Interestingly, several members of the matrix metalloproteinase (MMP) family are also induced during injury/disease processes in patterns overlapping that of OPN. OPN has recently been shown to be a novel substrate for two MMPs, MMP-3 (stromelysin-1) and MMP-7 (matrilysin). There are three cleavage sites for MMP-3 in human OPN, two of which are also cleaved by MMP-7 (see cleavage diagram). Biological assays demonstrate that the MMP-cleaved OPN has increased activity in promoting both cell adhesion and migration compared with full-length OPN. In addition, inhibitory reagents were used to show that the same receptors that interact with OPN also mediate interaction of MMP-cleaved OPN with tumor cells. It is suggested that active forms of OPN at sites of tissue injury may be regulated by the activity of proteases including MMPs and that the differences in activity of modified OPN may be explained by differences in binding affinity of integrins or distinct downstream signaling events. Osteopontin can be responsible for diseases such as lung and prostate cancers, nephrolithiasis, hepatocellular carcinoma, osteoporosis and arteriosclerosis. Anti-Osteopontin is useful for researchers interested in Stem Cell and Extracellular Matrix Antibodies.