Human Osteopontin/OPN Antibody

Monoclonal Mouse IgG_{2B} Clone # 190312

Catalog Number: MAB1433

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Osteopontin in direct ELISAs.
Source	Monoclonal Mouse IgG_{2B} Clone # 190312
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Osteopontin Ile17-Asn300 Accession # NP_000573.1
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 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
Immunohistochemistry	8-25 µg/mL	Immersion fixed paraffin-embedded sections of human breast cancer tissue

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 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	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 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

Osteopontin (OPN), previously called SPP1 (secreted phosphoprotein 1), Eta1(early T lymphocyte activation 1) or BSP (bone sialoprotein), is a secreted molecule in the SIBLING (small integrin binding ligand N-linked glycoprotein) family of noncollagenous matricellular proteins (1-3). Human OPN is synthesized as a 317 aminoacid (aa) precursor protein with a 16 aa signal peptide and a 301 aa mature protein (3). Mature human OPN shares 64% and 62% aa sequence identity with mouse and rat OPN, respectively. OPN is highly acidic and has 26 potential Ser/Thr phosphorylation sites and a C-terminal CD44 binding site (1-4). Depending on tissue-specific modification by O- and N-glycosylation, sulfation, phosphorylation and transglutamination, OPN can be detected at 45-75 kDa (5, 6). The central region of OPN contains RGD and nonRGD binding sites for multiple integrins (3, 4). Adjacent to the RGD motif is the sequence SVVYGLR (SLAYGLR in mouse) which serves as a cryptic binding site for additional integrins: it is masked in full length OPN but is exposed following OPN cleavage by thrombin in tumors and sites of tissue injury (6-8). OPN can also be cleaved by MMP3, 7, 9, and 12 within the SVVYGLR motif and at sites closer to the C-terminus (8, 9). OPN is widely expressed and is prominent in mineralized tissues. It inhibits bone mineralization and kidney stone formation, and promotes inflammation and cell adhesion and migration (1, 2, 4, 6). Its expression is up-regulated during inflammation, obesity, atherosclerosis, cancer, and tissue damage, and contributes to the pathophysiology of these conditions (1, 2, 6, 9, 10).

References:

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