

DESCRIPTION

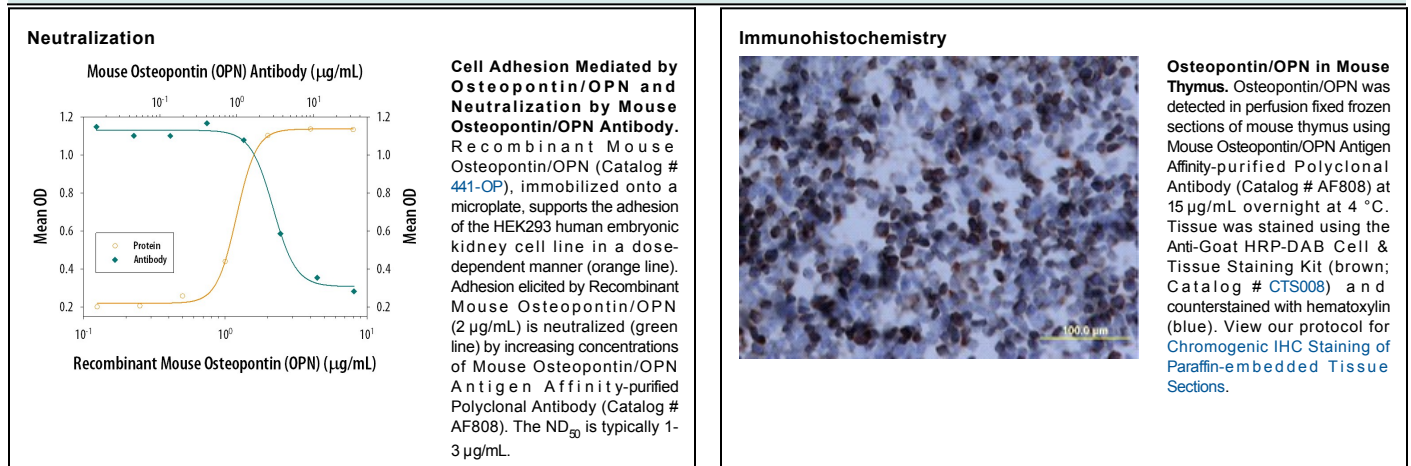
Species Reactivity	Mouse
Specificity	Detects mouse Osteopontin (OPN) in ELISAs and Western blots. In sandwich ELISAs, less than 3% cross-reactivity with recombinant human OPN is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse Osteopontin/OPN (R&D Systems, Catalog # 441-OP) Leu17-Asn294 (Glu99Gly) Accession # Q547B5
Endotoxin Level	<0.30 EU per 1 µg of the antibody by the LAL method.
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
Western Blot	0.1 µg/mL	Recombinant Mouse Osteopontin/OPN (Catalog # 441-OP)
Immunohistochemistry	5-15 µg/mL	See Below
Mouse Osteopontin/OPN Sandwich Immunoassay		Reagent
ELISA Capture	0.2-0.8 µg/mL	Mouse Osteopontin/OPN Antibody (Catalog # AF808)
ELISA Detection	0.1-0.4 µg/mL	Mouse Osteopontin/OPN Biotinylated Antibody (Catalog # BAF808)
Standard		Recombinant Mouse Osteopontin/OPN (Catalog # 441-OP)
Neutralization		Measured by its ability to neutralize Osteopontin/OPN-mediated adhesion of the HEK293 human embryonic kidney cell line. The Neutralization Dose (ND ₅₀) is typically 1-3 µg/mL in the presence of 2 µg/mL Recombinant Mouse Osteopontin/OPN.

DATA



PREPARATION AND STORAGE

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	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <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

Osteopontin (OPN, previously also referred to as transformation-associated secreted phosphoprotein, bone sialoprotein I, 2ar, 2B7, early T lymphocyte activation 1 protein, minopotin, calcium oxalate crystal growth inhibitor protein), is a secreted, highly acidic, calcium-binding, RGD-containing, phosphorylated glycoprotein originally isolated from bone matrix. Subsequently, OPN has been found in kidney, placenta, blood vessels and various tumor tissues. Many cell types (including macrophages, osteoclasts, activated T cells, fibroblasts, epithelial cells, vascular smooth muscle cells, and natural killer cells) can express OPN in response to activation by cytokines, growth factors or inflammatory mediators. Elevated expression of OPN has also been associated with numerous pathobiological conditions such as atherosclerotic plaques, renal tubulointerstitial fibrosis, granuloma formations in tuberculosis and silicosis, neointimal formation associated with balloon catheterization, metastasizing tumors, and cerebral ischemia. Mouse OPN cDNA encodes a 294 amino acid (aa) residue precursor protein with a 16 aa residue predicted signal peptide that is cleaved to yield a 278 aa residue mature protein with an integrin binding sequence (RGD), and N- and O-glycosylation sites. OPN has been shown to bind to different cell types through RGD-mediated interaction with the integrins $\alpha_5\beta_1$, $\alpha_v\beta_3$, $\alpha_v\beta_5$, and non-RGD-mediated interaction with CD44 and the integrins $\alpha_8\beta_1$ or $\alpha_9\beta_1$. Functionally, OPN is chemotactic for macrophages, smooth muscle cells, endothelial cells and glial cells. OPN has also been shown to inhibit nitric oxide production and cytotoxicity by activated macrophages. Human, mouse, rat, pig and bovine OPN share from approximately 40-80% amino acid sequence identity. Osteopontin is a substrate for proteolytic cleavage by thrombin, enterokinase, MMP-3 and MMP-7. The functions of OPN in a variety of cell types were shown to be modified as a result of proteolytic cleavage (2, 3).

References:

1. Ann. N.Y. Acad. Sci., vol. 760, 1995, Apr. 21.
2. Senger, D.R. *et al.* (1996) *Biochim. Biophys. Acta.* **1314**:13.
3. Agnihotri, R. *et al.* (2001) *J. Biol. Chem.* **276**:28261.