

## Anti-Osteopontin (NT) (Clone 2C5)

**ALTERNATE NAMES:** OPN, BNSP, Bone sialoprotein 1, Nephropontin, Secreted phosphoprotein 1, SPP-1, Urinary stone protein, Uropontin.

**CATALOG #:** 5422-100

**AMOUNT:** 100 µg

**HOST:** Mouse

**ISOTYPE:** IgG 1κ

**IMMUNOGEN:** Recombinant full-length human Osteopontin

**PURIFICATION:** Protein A chromatography from ascites

**PURITY:** > 95% determined by Size Exclusion Chromatography

**FORMULATION:** 1 mg/ml in 0.15 M PBS

**pI:** 7.0 – 7.5

**SPECIFICITY:** Recognizes native human Osteopontin from purified breast milk. Specific for the N-terminal fragment of full-length Osteopontin.

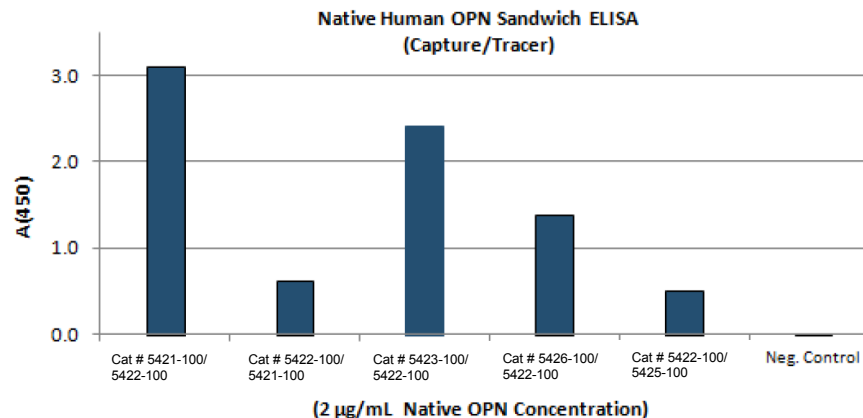
**STORAGE CONDITIONS:** Store at -20 to -80°C; avoid repeat freeze-thaw cycles

**DESCRIPTION:**

Human Osteopontin (OPN) is a negatively charged hydrophilic protein of 314 amino acids and is subject to significant post translational modifications (PTM) including phosphorylation and glycosylation. Due to its acidic nature and PTMs, OPN runs anomalously by SDS-PAGE. Although its mass is 35kD, apparent molecular weights may range up to 75kD. In addition, OPN is subject to proteolytic modification into smaller molecular weight fragments. The extracellular matrix protein osteopontin binds to cell surface receptors and is secreted into many body fluids including milk, blood and urine, depending on the organ of origin. This makes osteopontin an ideal candidate for being a biomarker as the secreted form is easily obtained in throwaway fluids, and mimics the cellular environment from which it is released. Osteopontin is important in immune responses and inflammation as well as bone generation and remodeling. In autistic children, serum levels of osteopontin are correlated to the severity of disease, probably due to a brain inflammation pattern in these children. In aortic valve sclerosis and stenosis, increased levels of secreted osteopontin are also noted. Osteopontin has also been suggested as a cancer biomarker, since it is associated with tumor formation, progression and metastasis. In bone and tooth formation osteopontin is known to be a negative regulator of parathyroid hormone-related protein receptor, which induces osteogenesis. Without appropriate levels of osteopontin, bone growth continues unregulated, and leads to specific bone cancers. In short, osteopontin is a strong marker for bone growth,

inflammation and certain cancers. The newly exposed SVVYG epitope on the N-terminal fragment has also been shown to participate in cell adhesion.

**APPLICATION:** ELISA, WB.



An extensive ELISA matched pair study was conducted for all six mAbs to OPN. Using native OPN at 2 µg/ml, Cat # 5421-100 pairs with Cat # 5422-100 in either configuration, but achieves higher signal when used as the capture antibody with Cat # 5422-100 as tracer. Cat # 5423-100 as capture and Cat # 5422-100 as tracer also show good potential for an OPN quantitative assay. An irrelevant pair of antibodies was used as a negative control.

**Note:** *This information is only intended as a guide. The optimal dilutions must be determined by the user*

**RELATED PRODUCTS:**

- Anti-Osteopontin Antibody (Clone 14C08) (Cat. No. 5421-100)
- Anti-Osteopontin Antibody (NT) (Clone 2F10) (Cat. No. 5423-100)
- Anti-Osteopontin Antibody (NT) (Clone 2E11) (Cat. No. 5424-100)
- Anti-Osteopontin Antibody (NT) (Clone 2H9) (Cat. No. 5425-100)
- Anti-Osteopontin Antibody (CT) (Clone 1F11) (Cat. No. 5426-100)

**FOR RESEARCH USE ONLY! Not to be used on humans.**