

## Anti-osteopontin [hu1A12] Bulk Size Ab00750-23.0-BT

This chimeric rabbit antibody was made using the variable domain sequences of the original Mouse IgG1 format, for improved compatibility with existing reagents, assays and techniques.

**Isotype and Format:** Rabbit IgG, Kappa

**Clone Number:** hu1A12

**Alternative Name(s) of Target:** OPN; Bone sialoprotein 1; Nephropontin; Secreted phosphoprotein 1; SPP-1; SPP1; Urinary stone protein; uropontin

**UniProt Accession Number of Target Protein:** P10451

**Published Application(s):** inhibit, SPR, ELISA, IHC

**Published Species Reactivity:** Human

**Immunogen:** 1A12 antibody was prepared by immunizing BALB/c mice with purified recombinant human OPN. The antibody was humanized by complementarity-determining region grafting the mouse 1A12 CDRs into a human FR template, with some FR residues being substituted for those found to be key in the mouse version to maintain affinity for human OPN. The light and heavy chain expression vectors were co-transfected into COS-7 cells.

**Specificity:** hu1A12 binds to the epitope (212)NAPSD(216) of the human OPN protein sequence. High levels of OPN expression is associated with highly metastatic cancer cells and has been a target in cancer therapy. OPN has been shown to contribute to the malignancy of breast cancer as it is involved in pathways regulating cell adhesion and invasion, enhancing cell motility produces pro-survival signals by regulating the activities of Bcl-2 proteins. OPN possesses domains which facilitate interaction with multiple integrins and CD44 proteins. OPN is expressed in multiple cell types including osteoclasts, osteoblasts, epithelial cells of the breast, kidney, skin, nerve cells, vascular smooth muscle cells, endothelial cells and activated macrophages and lymphocytes.

**Application Notes:** hu1A12 suppresses MDA-MB-435S (highly metastatic human breast cancer cell line) cell migration (evaluated by scratch-wound healing) and also inhibits cell adhesion of MDA-MB-435S cells to human OPN. hu1A12 also inhibits the anti-apoptotic and pro-survival functions of OPN possibly through upregulating Bax, downregulating Bcl-2, and blocking the activation of NF- $\kappa$ B. hu1A12 also has been shown to suppress primary breast tumour growth in humans through in vivo studies. This antibody has also been used in ELISA, IHC and SPR studies.

**Antibody First Published in:** Dai et al. A humanized anti-osteopontin antibody inhibits breast cancer growth and metastasis in vivo. *Cancer Immunol Immunother.* 2010 Mar;59(3):355-66.

[PMID:](#)

**Note on publication:** Describes the humanization of mouse 1A12 and the anti-tumor effect was investigated both in vitro and in vivo using MDA-MB-435S (highly metastatic human breast cancer cell line) cells.

## Product Form

**Size:** 1 mg Purified antibody in bulk size.

**Purification:** Protein A affinity purified

**Supplied In:** PBS only.

**Storage Recommendation:** Store at 4°C for up to 3 months. Note, this antibody is provided without added preservatives, it is therefore recommended this antibody be handled under sterile conditions. For longer storage, aliquot and store at -20°C.

**Concentration:** 1 mg/ml.

Important note - This product is for research use only. It is not intended for use in therapeutic or diagnostic procedures for humans or animals.