

DESCRIPTION	
Species Reactivity	Human
Specificity	Detects human Osteoprotegerin/TNFRSF11B in direct ELISAs and Western blots. In direct ELISAs, approximately 20% cross-reactivity with recombinant mouse Osteoprotegerin is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>S. frugiperda</i> insect ovarian cell line Sf 21-derived recombinant human Osteoprotegerin/TNFRSF11B Glu22-Leu401 Accession # AAB53709
Endotoxin Level	<0.10 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 either lyophilized or as a 0.2 µm filtered solution in PBS.

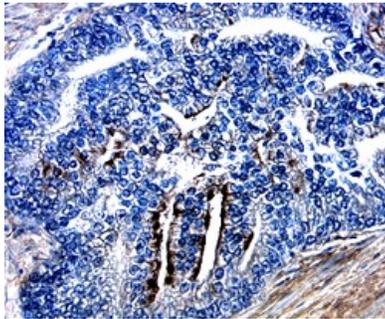
APPLICATIONS

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 Human Osteoprotegerin/TNFRSF11B (Catalog # 185-OS)
Immunohistochemistry	5-15 µg/mL	See Below
Neutralization	Measured by its ability to neutralize Osteoprotegerin/TNFRSF11B-mediated inhibition of cytotoxicity in the L-929 mouse fibroblast cell line. The Neutralization Dose (ND ₅₀) is typically 0.25-0.7 µg/mL in the presence of 0.1 µg/mL Recombinant Human Osteoprotegerin/TNFRSF11B, 20 ng/mL Recombinant Human TRAIL/TNFSF10, a cross-linking antibody, Mouse polyHistidine Monoclonal Antibody, and 1 µg/mL actinomycin D.	

DATA

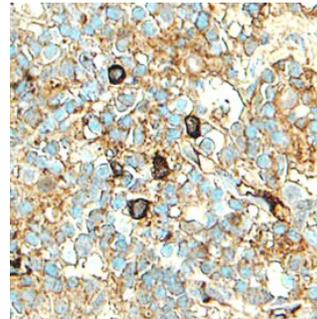
Immunohistochemistry



Osteoprotegerin/TNFRSF11B in Human Lymph Node.

Osteoprotegerin/TNFRSF11B was detected in immersion fixed paraffin-embedded sections of human lymph node using 15 µg/mL Goat Anti-Human Osteoprotegerin/TNFRSF11B Antigen Affinity-purified Polyclonal Antibody (Catalog # AF805) overnight at 4 °C. Tissue was stained with the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). View our protocol for [Chromogenic IHC Staining of Paraffin-embedded Tissue Sections](#).

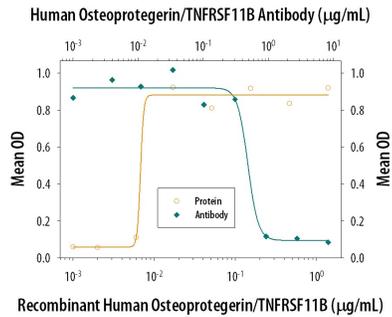
Immunohistochemistry



Osteoprotegerin/TNFRSF11B in Human Lymph Node.

Osteoprotegerin/TNFRSF11B was detected in immersion fixed paraffin-embedded sections of human lymph node using Goat Anti-Human Osteoprotegerin/TNFRSF11B Antigen Affinity-purified Polyclonal Antibody (Catalog # AF805) at 25 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). Specific labeling was localized to the cytoplasm and plasma membrane of lymphocytes. View our protocol for [Chromogenic IHC Staining of Paraffin-embedded Tissue Sections](#).

Neutralization



Osteoprotegerin/TNFRSF11B Inhibition of TRAIL/TNFSF10-induced Cytotoxicity and Neutralization by Human Osteoprotegerin/TNFRSF11B Antibody.

In the presence of a cross-linking antibody, Mouse poly-Histidine Monoclonal Antibody (Catalog # MAB050) (Catalog # MAB050) and the metabolic inhibitor actinomycin D (1 µg/mL), Recombinant Human Osteoprotegerin/TNFRSF11B (Catalog # 185-OS) inhibits Recombinant Human TRAIL/TNFSF10 (Catalog # 375-TL) induced cytotoxicity in the L-929 mouse fibroblast cell line in a dose-dependent manner (orange line), as measured by crystal violet staining. Under these conditions, inhibition of Recombinant Human TRAIL/TNFSF10 (20 ng/mL) activity elicited by Recombinant Human Osteoprotegerin/TNFRSF11B (0.1 µg/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Human Osteoprotegerin/TNFRSF11B Antigen Affinity-purified Polyclonal Antibody (Catalog # AF805). The ND₅₀ is typically 0.25-0.7 µg/mL.

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

Osteoprotegerin (OPG)/Osteoclastogenesis Inhibitory Factor (OCIF) is a member of the tumor necrosis factor receptor superfamily that lacks any apparent cell-association motifs and exists as a soluble secreted protein. In the TNF superfamily nomenclature, OPG is referred to as TNFRSF11B. OPG was originally isolated by sequence homology as a TNF receptor family protein during a fetal rat intestine cDNA-sequencing project and subsequently shown to be involved in the regulation of bone density. OCIF was initially purified from the conditioned medium of human embryonic fibroblasts based on its ability to inhibit osteoclast development. Comparison of the amino acid (aa) sequences of human OPG and OCIF proteins revealed their identity. Human OPG/OCIF cDNA encodes a 401 aa residue precursor protein with a 21 aa residue putative signal peptide that is removed to generate the mature soluble protein. The amino-terminal half of OPG contains four cysteine-rich repeats characteristic of TNF receptor family members. The 204 residues of the carboxy-terminal OPG/OCIF was found to contain two death domain homologous regions in tandem. Human and mouse OPG share approximately 84% and 94% amino acid sequence identity, respectively, with the rat OPG. Natural OPG/OCIF has been found to exist predominantly as disulfide-linked dimers. Two TNF superfamily ligands, including the membrane proteins OPG ligand/TRANCE (tumor necrosis factor-related activation-induced cytokine)/ODF (osteoclast differentiation factor)/RANKL (receptor activator of NFκB ligand) and TRAIL (TNF-related apoptosis-inducing ligand)/APO-2 ligand, have been shown to be the cellular ligands for OPG/OCIF. Each of these ligands has been shown to interact with additional TNF receptor family members, including RANK (with TRANCE) and TRAIL receptors 1 - 4 (with TRAIL). The roles of these receptor-ligands in osteoclastogenesis, apoptosis and in the immune system remains to be elucidated.

References:

1. Lacey, D.L. *et al.* (1998) *Cell* **93**:165.
2. Emery, J.G. *et al.* (1998) *J. Biol. Chem.* **273**:14363.
3. Yasuda, H. *et al.* (1998) *Proc. Natl. Acad. Sci. USA* **95**:3597.