Human COMP/Thrombospondin-5 Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF3134

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human COMP in direct ELISAs and Western blots. In direct ELISAs, approximately 50% cross-reactivity with recombinant mouse COMP is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human COMP/Thrombospondin-5 Gln21-Ala757 (Ala256Arg) Accession # P49747
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.

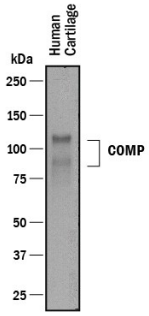
APPLICATIONS

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	0.05 µg/mL	See Below
Neutralization	Measured by its ability to neutralize COMP/Thrombospondin-5-mediated adhesion of the ATDC5 mouse chondrogenic cell line. The Neutralization Dose (ND_{50}) is typically 1-4 µg/mL in the presence of 10 µg/mL Recombinant Human COMP/Thrombospondin-5.	

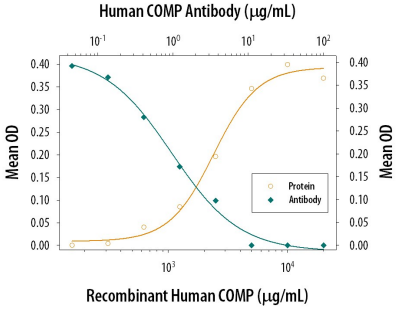
DATA

Western Blot



Detection of Human COMP/Thrombospondin-5 by Western Blot. Western blot shows lysates of human cartilage tissue. PVDF membrane was probed with 0.05 µg/mL of Goat Anti-Human COMP/Thrombospondin-5 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3134) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # Catalog # HAF017). Specific bands were detected for COMP/Thrombospondin-5 at approximately 90 and 110 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Neutralization



Cell Adhesion Mediated by COMP/Thrombospondin-5 and Neutralization by Human COMP/Thrombospondin-5 Antibody. Recombinant Human COMP/Thrombospondin-5 (Catalog # Catalog # 3134-CP), immobilized onto a microplate, supports the adhesion of the ATDC5 mouse chondrogenic cell line in a dose-dependent manner (orange line). Adhesion elicited by Recombinant Human COMP/Thrombospondin-5 (10 µg/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Human COMP/Thrombospondin-5 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3134). The ND_{50} is typically 1-4 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	**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.

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BACKGROUND

Cartilage Oligomeric Matrix Protein (COMP), also known as Thrombospondin-5, is a 110 kDa multidomain calcium binding protein that associates with other extracellular matrix molecules. Thrombospondin-1 and -2 constitute subgroup A and form homotrimers, whereas Thrombospondin-3, -4, and COMP constitute subgroup B and form homopentamers (1-4). The human COMP cDNA encodes a 757 amino acid (aa) precursor that includes a 20 aa signal sequence followed by a non-collagenous coiled-coil domain, four EGF-like repeats, seven TSP type-3 repeats, and a globular TSP C-terminal domain (5). Human COMP shares 86-93% aa sequence identity with rat, mouse, equine, bovine, and canine COMP. Within the TSP type-3 repeats and TSP C-terminal domain, human COMP shares 60%, 61%, 74%, and 80% aa sequence identity with human Thrombospondin-1, -2, -3, and -4, respectively. The coiled coil domain mediates the association of COMP into disulfide-linked homopentamers with a central hub and peripheral globular domains connected by flexible strands (6, 7). An axial pore is formed by the coiled coil assembly and binds vitamin D_3 which is involved in bone and cartilage metabolism (8). An RGD sequence in the third TSP type-3 repeat mediates chondrocyte attachment *via* Integrin α5β1, although when reduced and in the absence of calcium, attachment is mediated via Integrin αVβ3 (9). COMP is upregulated in rheumatoid arthritis and osteoarthritis, hepatocellular carcinomas, chronic pancreatitis, and pancreatic carcinomas (10-12). Elevated circulating COMP levels are used as a biomarker for early onset of some skeletal disorders (10). Several mutations are associated with skeletal dysplasias, and the most common, a point mutation in the third TSP type-3 repeat, results in diminished calcium binding ability (13, 14).

References:

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