

DESCRIPTION

Species Reactivity	Human
Specificity	Detects a synthetic peptide specific for human PRG4 around amino acid 75 in Direct ELISA
Source	Monoclonal Mouse IgG Clone # 1124536
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Synthetic Peptide Accession # Q92954
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose.

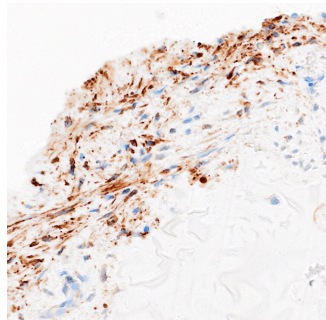
APPLICATIONS

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
Immunohistochemistry	3-25 µg/mL	Immersion fixed paraffin-embedded sections of human cartilage

DATA

Immunohistochemistry



Detection of Lubricin/PRG4 in Human Cartilage.

Lubricin/PRG4 was detected in immersion fixed paraffin-embedded sections of human cartilage using Mouse Anti-Human Lubricin/PRG4 Monoclonal Antibody (Catalog # MAB11820) at 5 µg/ml overnight at 4 °C. Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using VisUCyte Antigen Retrieval Reagent-Basic (Catalog # VCTS021). Tissue was stained using the HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018) and counterstained with hematoxylin (blue). Specific staining was localized to the cytoplasm. View our protocol for [Chromogenic IHC Staining of Paraffin-embedded Tissue Sections](#).

PREPARATION AND STORAGE

Reconstitution	Reconstitute lyophilized material at 0.2 mg/ml in sterile PBS. For liquid material, refer to CoA for concentration.
Shipping	Lyophilized product is shipped at ambient temperature. Liquid small pack size (-SP) is shipped with polar packs. Upon receipt, store immediately at the temperature recommended below.
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.

BACKGROUND

Proteoglycan 4 (PRG4), also known as lubricin, is a critical glycoprotein prominently expressed in articular cartilage and synovial fluid, with a molecular weight varying between 200-300 kDa due to extensive glycosylation. PRG4 is integral to maintaining joint homeostasis by reducing friction between articular cartilage surfaces during motion and protecting cartilage from mechanical wear. This glycoprotein is primarily secreted by synovial fibroblasts and superficial zone chondrocytes, where it contributes to the boundary lubrication of joints and maintains the health of synovial tissues. Dysregulation of PRG4 expression has been implicated in various pathological conditions, including osteoarthritis and synovial fibrosis. Genetic mutations in the PRG4 gene can lead to camptodactyly-arthropathy-coxa vara-pericarditis (CACP) syndrome, characterized by early-onset arthritis and joint dysfunction. Beyond its role in joint physiology, PRG4 has been identified to modulate immune responses and influence cell adhesion, making it a potential therapeutic target for degenerative joint diseases. Moreover, recombinant PRG4 is being explored as a therapeutic agent to restore lubrication and protect articular cartilage in joint disorders.

References:

1. Jay GD, Waller KA. The biology of lubricin: near frictionless joint motion. *Matrix Biol.* 2014 Oct;39:17-24. doi: 10.1016/j.matbio.2014.08.008. Epub 2014 Aug 27. PMID: 25172828.
2. Menon NG, Tanguay AP, Zhou L, Zhang LX, Bobst CE, Han M, Ghosh M, Greene GW, Deymier A, Sullivan BD, Chen Y, Jay GD, Schmidt TA. A structural and functional comparison between two recombinant human lubricin proteins: Recombinant human proteoglycan-4 (rhPRG4) vs ECF843. *Exp Eye Res.* 2023 Oct;235:109643. doi: 10.1016/j.exer.2023.109643. Epub 2023 Sep 8. PMID: 37678729; PMCID: PMC10691279.
3. Iqbal SM, Leonard C, Regmi SC, De Rantere D, Tailor P, Ren G, Ishida H, Hsu C, Abubacker S, Pang DS, Salo PT, Vogel HJ, Hart DA, Waterhouse CC, Jay GD, Schmidt TA, Krawetz RJ. Lubricin/Proteoglycan 4 binds to and regulates the activity of Toll-Like Receptors In Vitro. *Sci Rep.* 2016 Jan 11;6:18910. doi: 10.1038/srep18910. PMID: 26752378; PMCID: PMC4707532.