

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Aggrecan G1-IGD-G2 Domains in direct ELISA.
Source	Monoclonal Mouse IgG ₁ Clone # 179503
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Aggrecan Val20-Gly675 Accession # NP_037359
Conjugate	Alexa Fluor 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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.

ELISA Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

BACKGROUND

Aggrecan, also known as aggrecan 1, chondroitin sulfate proteoglycan, and large aggregating proteoglycan, is encoded by the AGC1 gene with gene aliases of SEDK; CSPG1; MSK16; CSPGCP (1). As the key component of the cartilage extracellular matrix, aggrecan hydrates the collagen network and provides cartilage with its properties of compressibility and elasticity. Maintenance of aggrecan content is therefore critical to the function of the tissue and aggrecan degradation is an important factor in the erosion of articular cartilage in arthritic diseases (2). The deduced amino acid sequence of human aggrecan core protein consists of 2415 residues and predicts a signal peptide and domains of G1, IGD, G2, KS, CS-1, CS-2 and G3 (3). Two globular domains, G1 and G2, comprise the N-terminus of the proteoglycan and also contain link domains. The third globular domain, G3, corresponds to the C-terminus. The keratan sulfate (KS) and the chondroitin sulfate (CS) attachment domains are between G2 and G3. With KS and CS attached to the 250 kDa core protein, aggrecan monomers exist as a 1,000 to 2,000 kDa molecule. In addition, aggrecan monomers interact with hyaluronan through their G1 domain, resulting in larger aggregates containing 10 to 100 aggrecan monomers on a hyaluronan backbone (2). Aggrecan can be cleaved by MMPs and ADAMTSs at the Asn360-Phe361 and Glu392-Ala393 bond in the IGD (residues are numbered based on Accession # NP_037359), respectively (2). Inhibition of ADAMTS4 and ADAMTS5 cleavage prevents aggrecan degradation in osteoarthritic cartilage, while mice with aggrecan resistant to MMP cleavage do not accumulate aggrecan and develop normally (2, 4).

PRODUCT SPECIFIC NOTICES

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc, and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.