

## DESCRIPTION

|                                                                                                                                                                                                         |                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b>                                                                                                                                                                               | Human                                                                                                   |
| <b>Specificity</b>                                                                                                                                                                                      | Detects human Aggrecan in direct ELISAs and Western blots.                                              |
| <b>Source</b>                                                                                                                                                                                           | Polyclonal Goat IgG                                                                                     |
| <b>Purification</b>                                                                                                                                                                                     | Antigen Affinity-purified                                                                               |
| <b>Immunogen</b>                                                                                                                                                                                        | Mouse myeloma cell line NS0-derived recombinant human Aggrecan<br>Val20-Arg675<br>Accession # NP_037359 |
| <b>Conjugate</b>                                                                                                                                                                                        | Alexa Fluor 488<br>Excitation Wavelength: 488 nm<br>Emission Wavelength: 515-545 nm                     |
| <b>Formulation</b>                                                                                                                                                                                      | 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.

|                             |                                                                        |
|-----------------------------|------------------------------------------------------------------------|
| <b>Western Blot</b>         | Optimal dilution of this antibody should be experimentally determined. |
| <b>Immunocytochemistry</b>  | Optimal dilution of this antibody should be experimentally determined. |
| <b>Immunohistochemistry</b> | Optimal dilution of this antibody should be experimentally determined. |

## PREPARATION AND STORAGE

|                                |                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Shipping</b>                | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| <b>Stability &amp; Storage</b> | 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. 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 1,000-2,000 kDa molecule. In addition, aggrecan monomers interact with hyaluronan through their G1 domain, resulting in larger aggregates containing 10-100 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). Consisting of the G1, IGD and G2 domains, rhAggrecan can be used as a protein substrate for MMPs and ADAMTSs and in binding assays involving hyaluronan.

## PRODUCT SPECIFIC NOTICES

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