COSMO BIO CO., LTD.
Inspiration for Life Science

MONOCLONAL ANTIBODY

For research use only. Not for clinical diagnosis

Catalog No. PRPG-AG-M01

Anti- Aggrecan (6F4)
[ACAN/Chondroitin sulphate proteoglycan]

BACKGROUND

Aggrecan is the major proteoglycan in the articular cartilage (synthesized by mature chondrocytes) and a primary in perineuronal nets of the CNS. While its precise function around CNS neurons remains obscure, in articular cartilage it contributes to creating the hydrated gel structure of the ECM via its interaction with hyaluronan, link protein, CMPs, COMP and collagen type IX. Deletion of the *aggrecan* gene cause early disturbances in chondrogenesis and brain defects.*

Product type	Primary antibodies
Immunogen	Purified human articular cartilage aggrecan
Rased in	Mouse
Myeloma	-
Clone number	6F4
Isotype	IgG1
Host	-
Source	Hybridoma cell culture
Purification	-
Form	Liquid
Storage buffer	Supernatant supplemented with 0.05% NaN3
Concentration	ND
Volume	2 mL
Label	Unlabeled
Specificity	Aggrecan (ACAN/Chondroitin sulfate proteoglycan)
Cross reactivity	Human, Bovine Other species have not been tested.
Storage	Store at 4°C for short-term storage and -20°C for prolonged storage Aliquot to avoid cycles of freeze / thaw.
Other	**Data Link** : UniProtKB/Swiss-Prot P16112 (PGCA_HUMAN)

Application notes
Recommended dilutions

WB, IP, IHC, ELISA

- Western blotting, 1/10 - 1/30 (Distinct band at 260 kD)
- Immunoprecipitation, 1/5 - 1/10
- Immunohistochemistry, 1/5 - 1/50 (paraffin-embedded)
  <Staining Pattern>
  MAb 6F4 detects aggrecan isoforms enriched around chondrocytes of territorial layers of articular cartilage and weakly expressed in perineuronal nets of the human adult brain cortex.
- ELISA, 1/10 - 1/150

Other applications have not been tested.
Optimal dilutions/concentrations should be determined by the end user.

References

Virgintino D, *et all.*, (2009) Aggrecan isoforms of perineuronal nets identify subsets of parvalbumin and calbindin neurons differentially distributed in cortical layers II-VI of human adult cortex. *J. Cell. Mol. Medicine* 13, 3151-3173.

ANTIBODY CHARACTERIZATION

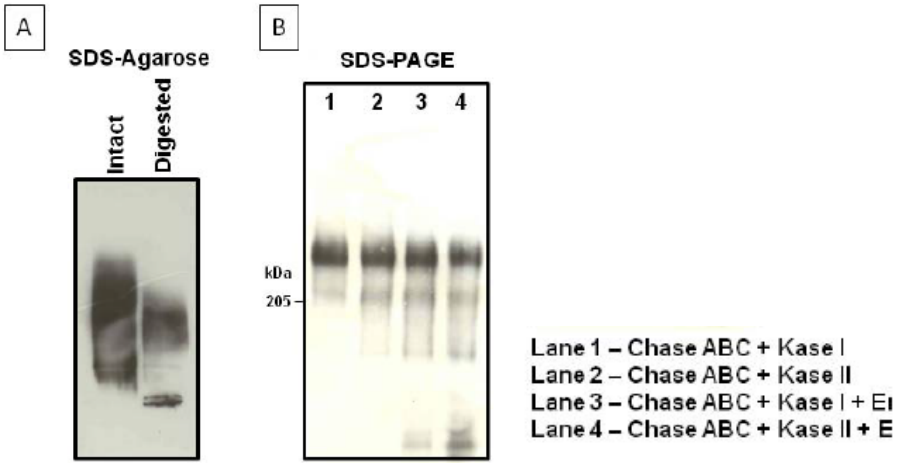

Fig.1 Western blotting of purified human cartilage aggrecan.
(A) SDS-Agarose gel electrophoresis (0.5%) before and after combined chondroitinase ABC digestion of aggrecan
(B) SDS-PAGE on 3-8% linear gradient gels, after the combined digestions of aggrecan indicated in the legend below.

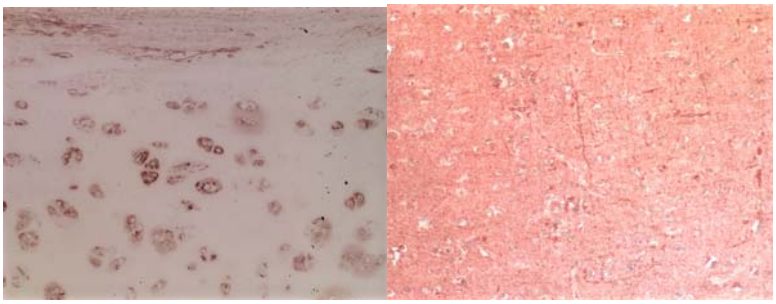

Fig.2 Immunohistochemistry on normal human articular cartilage (left) and brain cortex (right).

RELATED PRODUCTS:

Product Name	Maker	Cat#
Anti Aggrecan (6F4) Monoclonal Antibody	CAC	PRPG-AG-M01
Anti Aggrecan (5D3) Monoclonal Antibody	CAC	PRPG-AG-M02
Anti Aggrecan (5G2) Monoclonal Antibody	CAC	PRPG-AG-M03
Anti Aggrecan (7B7) Monoclonal Antibody	CAC	PRPG-AG-M04
Anti Versican/CSPG2 (5C12) Monoclonal Antibody	CAC	PRPG-VS-M01
Anti Versican/CSPG2 (4C5) Monoclonal Antibody	CAC	PRPG-VS-M02
Anti NG2 / CSPG4 (2164H5) Monoclonal Antibody	CAC	PRPG-NG-M01
Anti COMP (484D1) Monoclonal Antibody	CAC	PRPG-CP-M01
Anti COMP（490D11）Monoclonal Antibody	CAC	PRPG-CP-M02
Anti Keratan sulfate (373E1) Monoclonal Antibody	CAC	PRPG-KS-M01
Anti Decorin (889C7) Monoclonal Antibody	CAC	PRPG-DC-M01
Anti Fibromodulin (636B12) Monoclonal Antibody	CAC	PRPG-FBM-M01
Anti Biglycan (905A7) Monoclonal Antibody	CAC	PRPG-BG-M01
Anti XTP1 (2191H1) Monoclonal Antibody	CAC	PRPG-XTP-M01
Anti SDP35 (2200D12) Monoclonal Antibody	CAC	PRPG-SDP-M01
Anti Laminin α4 (652C4)　Monoclonal Antibody	CAC	PRPG-LA4-M01
Anti Collagen 12 (378D5) Monoclonal Antibody	CAC	PRPG-CO12-M01

＊< BACKGROUND : Aggrecan (ACAN/ Chondroitin sulphate proteoglycan) >

Aggrecan is the major proteoglycan in the articular cartilage (synthesized by mature chondrocytes) and a primary in perineuronal nets of the CNS. While its precise function around CNS neurons remains obscure, in articular cartilage it contributes to creating the hydrated gel structure of the ECM via its interaction with hyaluronan, link protein, CMPs, COMP and collagen type IX. Deletion of the *aggrecan* gene cause early disturbances in chondrogenesis and brain defects. *Aggrecan* is a multimodular molecule whose core protein is composed of three globular domains denoted G1, G2, and G3, a large extended region spanning the portion of the molecule between the globular domains G1 and G2 and containing the majority of the GAG attachment sites and a second GAG-bearing inter-globular domain (IGD) is posed between G2 and G3. The GAG attachment domain between G1 and G2 prevalently contains chondroitin sulphate chains (up to 40) and some keratan sulfate chains. Conversely, the inter-globular G2-G3 domain carries exclusively keratan sulphate chains. The corresponding core protein region of sclera and brain *aggrecan*s do not seem to substituted with keratan sulphates. The G1 amino-terminal domain of the *aggrecan* core protein has the same structural motif as link protein and is responsible for the binding of the proteoglycan to hyaluronan and link protein. The G2 globular domain is homologous to the tandem repeats of G1 and of link protein and is crucial for the synthesis and cellular secretion of *aggrecan*. The G3 globular domain makes up the carboxyl terminus of the core protein and similarly responsible for post-translational processing of the proteoglycan and its secretion, as well as for its molecular interactions with other cartilage ECM components. Fully glycosylated/glycanated *aggrecan* of articular cartilage has typically an average size of 2,400-2,500 kDa, but its Mr may vary with age and the conditions of the cartilage tissue. The non-glycosylated/non-glycanated core protein has an approximate Mr of 240 kDa.

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