

aggrecan/brevican (D-4): sc-166951

BACKGROUND

The large chondroitin sulfate proteoglycan, aggrecan, is the predominant proteoglycan present in cartilage. Aggrecan is a member of the chondroitin sulphate proteoglycan family, which also includes versican/PD-M, neurocan and brevican. Aggrecan is a complex multidomain macromolecule that undergoes extensive processing and post-translational modification. Aggrecan in cartilage forms aggregates with hyaluronan and link protein, embedded in a collagen network. Aggrecan accounts for the compressive stiffness and resilience of the hyaline cartilage. Many forms of inflammatory arthritis are shown to be accompanied with aggrecan degradation and loss from the cartilage. Brevican is a brain proteoglycan of the aggrecan/versican/neurocan family. In the adult brain, the brevican core protein undergoes proteolytic cleavage and exists as a full-length form a carboxy-terminal fragment and an amino-terminal fragment.

CHROMOSOMAL LOCATION

Genetic locus: ACAN (human) mapping to 15q26.1, BCAN (human) mapping to 1q23.1; Acan (mouse) mapping to 7 D2, Bcan (mouse) mapping to 3 F1.

SOURCE

aggrecan/brevican (D-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2255-2280 near the C-terminus of aggrecan of human origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-166951 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

aggrecan/brevican (D-4) is recommended for detection of aggrecan and brevican of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

aggrecan/brevican (D-4) is also recommended for detection of aggrecan and brevican in additional species, including canine.

Molecular Weight of aggrecan: 200 kDa.

Molecular Weight of full-length brevican: 145 kDa.

Positive Controls: A-10 cell lysate: sc-3806, c4 whole cell lysate: sc-364186 or HeLa whole cell lysate: sc-2200.

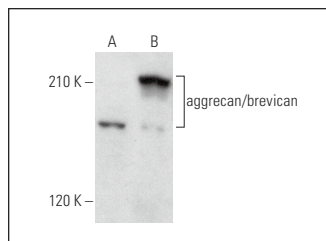
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

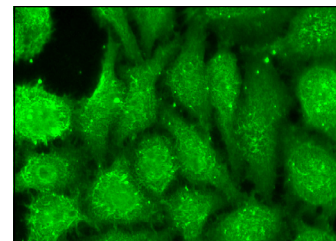
RESEARCH USE

For research use only, not for use in diagnostic procedures.

DATA



aggrecan/brevican (D-4): sc-166951. Western blot analysis of aggrecan/brevican expression in c4 (A) and A-10 (B) whole cell lysates.



aggrecan/brevican (D-4): sc-166951. Immunofluorescence staining of formalin-fixed HeLa cells showing cell surface localization.

SELECT PRODUCT CITATIONS

- Attia, M., et al. 2012. Alterations of overused supraspinatus tendon: a possible role of glycosaminoglycans and HARP/pleiotrophin in early tendon pathology. *J. Orthop. Res.* 30: 61-71.
- Sullivan, C.S., et al. 2018. Perineuronal net protein neurocan inhibits NCAM/EphA3 repellent signaling in GABAergic interneurons. *Sci. Rep.* 8: 6143.
- Britten, J.L., et al. 2019. Ulipristal acetate mediates decreased proteoglycan expression through regulation of nuclear factor of activated T-cells (NFAT5). *Reprod. Sci.* 26: 184-197.
- Gao, H., et al. 2020. Salidroside alleviates cartilage degeneration through NFκB pathway in osteoarthritis rats. *Drug Des. Devel. Ther.* 14: 1445-1454.
- Yu, L., et al. 2021. Genipin cross-linked decellularized nucleus pulposus hydrogel-like cell delivery system induces differentiation of ADSCs and retards intervertebral disc degeneration. *Front. Bioeng. Biotechnol.* 9: 807883.
- Horita, M., et al. 2022. MiR-29b inhibits TGF-β1-induced cell proliferation in articular chondrocytes. *Biochem. Biophys. Rep.* 29: 101216.
- Genovese, T., et al. 2022. Resveratrol inhibition of the WNT/β-catenin pathway following discogenic low back pain. *Int. J. Mol. Sci.* 23: 4092.
- Cui, Z., et al. 2022. Endothelial PDGF-BB/PDGFR-β signaling promotes osteoarthritis by enhancing angiogenesis-dependent abnormal subchondral bone formation. *Bone Res.* 10: 58.
- Yang, R, et al. 2023. Bardoxolone methyl ameliorates osteoarthritis by inhibiting osteoclastogenesis and protecting the extracellular matrix against degradation. *Heliyon* 9: e13080.



See **aggrecan (4F4): sc-33695** for aggrecan antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.