SANTA CRUZ BIOTECHNOLOGY, INC.

aggrecan (3H525): sc-70332

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/PG-M, neurocan and brevican. Aggrecan is a complex multidomain macromolecule that undergoes extensive processing and post-translational modification. In cartilage, aggrecan 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.

REFERENCES

1. Buzas, E.I., Mikecz, K. and Glant, T.T. 1996. Aggrecan: a target molecule of autoimmune reactions. Pathol. Oncol. Res. 2: 219-228.
2. Domowicz, M.S., Pirok, E.W. 3rd., Novak, T.E. and Schwartz, N.B. 2000. Role of the C-terminal G_3 domain in sorting and secretion of aggrecan core protein and ubiquitin-mediated degradation of accumulated mutant precursors. J. Biol. Chem. 275: 35098-35105.
3. Knudson, C.B. and Knudson, W. 2001. Cartilage proteoglycans. Semin. Cell Dev. Biol. 12: 69-78.
4. Chen, T.L., Wang, P.Y., Luo, W., Gwon, S.S., Flay, N.W., Zheng, J., Guo, C., Tanzer, M.L. and Vertel, B.M. 2001. Aggrecan domains expected to traffic through the exocytic pathway are misdirected to the nucleus. Exp. Cell Res. 263: 224-235.
5. Kiani, C., Lee, V., Cao, L., Chen, L., Wu, Y., Zhang, Y., Adams, M.E. and Yang, B.B. 2001. Roles of aggrecan domains in biosynthesis, modification by glycosaminoglycans and product secretion. Biochem. J. 354: 199-207.
6. BrUckner, G., Morawski, M. and Arendt, T. 2008. Aggrecan-based extracellular matrix is an integral part of the human basal ganglia circuit. Neuroscience 151: 489-504.

CHROMOSOMAL LOCATION

Genetic locus: ACAN (human) mapping to 15q26.1.

SOURCE

aggrecan (3H525) is a mouse monoclonal antibody raised against human articular cartilage aggrecan.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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.

APPLICATIONS

aggrecan (3H525) is recommended for detection of aggrecan of human origin by Western Blotting (starting dilution 1:200, 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for aggrecan siRNA (h): sc-41897, aggrecan shRNA Plasmid (h): sc-41897-SH and aggrecan shRNA (h) Lentiviral Particles: sc-41897-V.

Molecular Weight of aggrecan: 200 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

SELECT PRODUCT CITATIONS

1. Sun, F., Zhang, Y. and Li ,Q. 2017. Therapeutic mechanisms of ibuprofen, prednisone and betamethasone in osteoarthritis. Mol. Med. Rep. 15: 981-987.
2. Li, X., Yu, M., Chen, L., Sun, T., Wang, H., Zhao, L. and Zhao, Q. 2018. LncRNA PMS2L2 protects ATDC5 chondrocytes against lipopolysaccharide-induced inflammatory injury by sponging miR-203. Life Sci. 217: 283-292.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.