SANTA CRUZ BIOTECHNOLOGY, INC.

chondroitin sulfate (PG-4): sc-517303

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Chondroitin sulfate is a sulfated glycosaminoglycan (GAG) composed of a chain of alternating sugars, usually attached to proteins as part of a proteoglycan. Chondroitin sulfate is a major component of the extracellular matrix, and it plays a key role in maintaining the structural integrity of the tissue. Chondroitin sulfate is an important structural component of cartilage and is responsible for most of its resistance to compression. This molecule also has regulatory roles, as it readily interacts with proteins in the extracellular matrix due to its negative charges. These interactions are important for regulating a diverse array of cellular activities. In the nervous system, Chondroitin sulfate proteoglycans function to regulate the growth and development of the nervous system as well as the nervous system response to injury. Chondroitin is commonly used in dietary supplements as an alternative medicine to treat osteoarthritis.

REFERENCES

1. Davidson, E.A. and Meyer, K. 1955. Chondroitin, a new mucopolysaccharide. J. Biol. Chem. 211: 605-611.
2. McAlindon, T.E., et al. 2000. Glucosamine and chondroitin for treatment of osteoarthritis: a systematic quality assessment and meta-analysis. JAMA 283: 1469-1475.
3. Avci, F.Y., et al. 2003. Chondroitin O-methyl ester: an unusual substrate for chondroitin AC lyase. Carbohydr. Res. 338: 2101-2104.
4. Silbert, J.E. and Sugumaran, G. 2003. Biosynthesis of chondroitin/dermatan sulfate. IUBMB Life 54: 177-186.
5. Akiyama, H., et al. 2004. splenocytes sensitized with ovalbumin. Biochem. J. 382: 269-278.
6. Zou, X.H., et al. 2004. Chondroitin sulfate in palatal wound healing. J. Dent. Res. 83: 880-885.
7. Dawlee, S., et al. 2005. Oxidized chondroitin sulfate-cross-linked gelatin matrixes: a new class of hydrogels. Biomacromolecules 6: 2040-2048.
8. Clegg, D.O., et al. 2006. Glucosamine, chondroitin sulfate, and the two in combination for painful knee osteoarthritis. N. Engl. J. Med. 354: 795-808.
9. Barnhill, J.G., et al. 2006. Chondroitin product selection for the glucosamine/chondroitin arthritis intervention trial. J. Am. Pharm. Assoc. 46: 14-24.

SOURCE

chondroitin sulfate (PG-4) is a mouse monoclonal antibody raised againt dermal fibroblasts 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.

STORAGE

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

APPLICATIONS

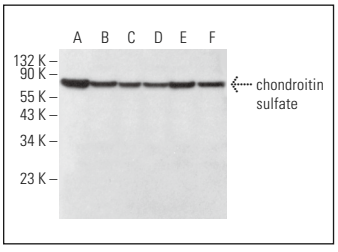
chondroitin sulfate (PG-4) is recommended for detection of a glycosaminoglycan epitope in both dermatan sulfate and chondroitin sulfate proteoglycans of human skin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

Positive Controls: HeLa whole cell lysate: sc-2200, A-10 cell lysate: sc-3806 or L6 whole cell lysate: sc-364196.

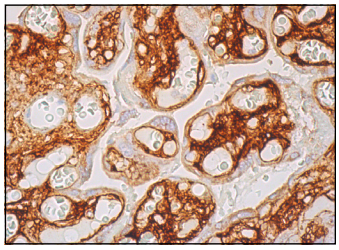
RECOMMENDED SUPPORT REAGENTS

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 L-Agarose: sc-2336 (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.

DATA



chondroitin sulfate (PG-4): sc-517303. Western blot analysis of chondroitin sulfate expression in HeLa (**A**), A-10 (**B**), L6 (**C**), Sol8 (**D**), C2C12 (**E**) and P19 (**F**) whole cell lysates.



chondroitin sulfate (PG-4): sc-517303. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic staining of trophoblastic cells and connective tissue staining. Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214. Detection reagents used: m-IgGκ BP-B: sc-516142 and ImmunoCruz® ABC Kit: sc-516216.

SELECT PRODUCT CITATIONS

1. Galla, R., et al. 2022. *In vitro* analysis of the effects of plant-derived chondroitin sulfate from intestinal barrier to chondrocytes. J. Funct. Foods 98: 105285.

RESEARCH USE

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

PROTOCOLS

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