COSMO BIO CO., LTD.
Inspiration for Life Science

MONOCLONAL ANTIBODY

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Catalog No. PRPG-KS-M01

Anti- Keratan sulfate (373E1)

BACKGROUND

Keratan sulfates (KSs) are sulfated polymers of N-acetyllactosamine structured by repeating (1 3)- -D-galactose-(1 4)- -D-N-acetylglucosamine units, which are generally sulfated at position C6 of the hexosamine and/or galactosamine. They are mostly covalently bound to core proteins of KS-bearing proteoglycans (PGs), but a few non-proteoglycan KS-substituted macromolecules have been described, and their attachment to protein backbones occurs primarily through an N-linkage involving glucosamine binding to an aspargine residue These are referred to type I KSs and are characteristic of the corneal ECM. KS chains may also be bound to proteins through an O-glycosidic linkage between galactosamine and a serine or threonine residue, i.e. referred to as type II KSs and highly represented in articular cartilage ECM. Phosphocan and other KS-containing PGs of the brain may also carry KS chains attached to the core protein through an alternative mannose-serine/threonine linkage.

One of the complexities of KSs is the variable degree of chain branching (i.e. bi-antennary in the cornea and more intricate branching in skeletal KS), which together with the variable extent and positioning of the sulfate groups and the relative frequency, linkage and type of capping fucose and/or neuraminic acid residues, creates a spectrum of putative functionally diverse KS moieties. For instance, sialic acid residues may coincidently, or in an alternated fashion be present in an (1-3), (2-3) or (2-6)-linkage, and may or may not associate with (1-3)-linked fucoses.

Product type	Primary antibodies
Immunogen	Purified avian embryonic proteoglycans
Rased in	Rat
Myeloma	-
Clone number	373E1
Isotype	IgM
Host	-
Source	Hybridoma cell culture
Purification	-
Form	Liquid
Storage buffer	Supernatant supplemented with 0.05% NaN3
Concentration	ND
Volume	2 mL
Label	Unlabeled
Specificity	Keratan sulfates
Cross reactivity	ALL species
Storage	Store at 4°C for short-term storage and -20°C for prolonged storage Aliquot to avoid cycles of freeze / thaw.

Application notes WB, IHC(P), IP, FC, ELISA

Recommended dilutions

- Western blotting : 1/50 – 1/170
- Immunohistochemistry : 1/50 - 1/150 *
- ELISA : 1/100 - 1/500

*<Staining Pattern>

Ubiquitously expressed through the body of vertebrates and expressed early on during embryogenesis around the notochord. Up-regulated in many tumour cells of epithelial origin and within the tumour stroma. Primary diagnostic marker of papillary type thyroid carcinoma.

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

References

Magro, M., *et.al.,* 2003. Proteomic and post-proteomic characterization of keratan sulfate-glycanated isoforms of thyroglobulin and transferrin uniquely elaborated by papillary thyroid carcinoma. Am J. Pathol. 163, 183-196.

ANTIBODY CHARACTERIZATION

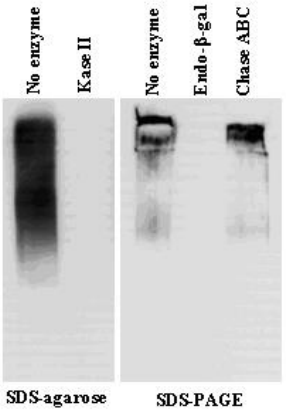

Fig.1 Western blotting of purified human articular cartilage aggrecan resolved prior to and after keratanase II, endo- -galactosidase-, or chondroitinase ABC-digestion on SDS-Agarose electrophoresis (left gel) or 3-8% gradient gels.
**Band sizing and pattern depends upon the core protein size of the molecule (mostly proteoglycans) bearing keratin sulfate chains. If isolated chains are separated by PAGE, the banding patern appears as a smear and the approximate molecular weights of the bands depend upon the mass and polydispersity of the chains.

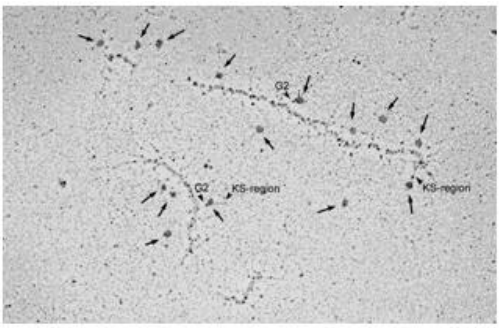

Fig.2 TEM rotary shadowing image of the binding of mAb 373E1 to keratan sulfate chains (arrows) of human articular cartilage aggrecan forming an hyaluronan-proteoglycan aggregate in vitro.

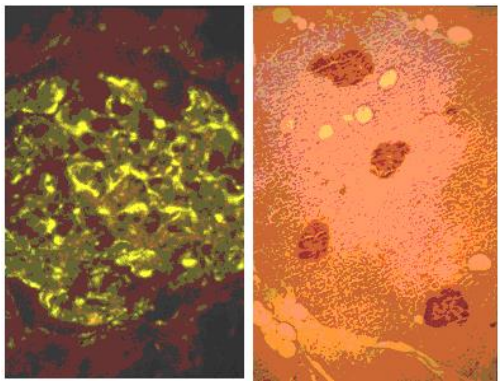

Fig.3 (Left) Immunohistochemical staining (FITC-conjugated secondary antibodies) with mAb 373E1 of keratan sulfates of the ECM deposited with a glomerule of human kidney (PFA-OCT embedding and cryosectioning).
(Right) Immunohistochemical staining of keratan sulfates deposited within Langerhans islands of human adult pancreas (Formalin-paraffin embedding).

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

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