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ProductInformation

MONOCLONAL ANTI-HUMAN TENASCIN
CLONE BC-24
Mouse Ascites Fluid

Product No. **T 2551**

Monoclonal Anti-Human Tenascin (mouse IgG1 isotype) is derived from the BC-24 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from an immunized mouse. Human tenascin was used as the immunogen. The isotype is determined using Sigma ImmunoType™ Kit (Sigma Stock No. ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Sigma Stock No. ISO-2). The product is provided as ascites fluid containing 15 mM sodium azide (see MSDS)* as a preservative.

Specificity

Monoclonal Anti-Human Tenascin recognizes an epitope located within the N-terminal EGF-like (EGF-L) sequence of the human tenascin molecule. The antibody reacts specifically with tenascin using ELISA, RIA and immunoblotting procedures. The product reacts with tenascin from frozen sections as well as protease-digested formalin-fixed, paraffin-embedded, Bouin's-, Brunnel's-, B5-, alcohol-acetic acid-, and Susa solution-fixed tissues. The antibody recognizes all isoforms of human tenascin.

Working Dilution

A working dilution of at least 1:4,000 was determined by indirect immunoperoxidase labeling of formalin-fixed, paraffin-embedded adult human tissue.

In order to obtain best results, it is recommended that each individual user determine optimum working dilution by titration assay.

Description

Tenascin (TN)[1,2] is a high molecular weight, multi-functional, extracellular matrix glycoprotein, expressed in association with mesenchymal-epithelial interactions during development and in the neovasculature and stroma of undifferentiated tumors. It has been described under a variety of names: cytotactin, hexabrachion protein, J1-200/220, myotendinous antigen (MI), neuronectin (NEC1) and glioma mesenchymal extracellular matrix (GMEM). The TN molecule is a disulfide-linked hexamer; depending on species, the molecular weights of the subunits range from 190 to 320 kD. In the mouse, two major subunits of tenascin with an apparent MW of 210 and 260 kD have been described, with the shorter polypeptide predominating during early developmental stages and the larger polypeptide appearing later in the embryonic gut and in the adult intestine.[3] Human TN has 3 subunits of 190, 200 and 220 kD. It is primarily made up of 14.5 epidermal growth-factor-like repeats, 15 units similar to the fibronectin type-III-homology repeat and, at the C-terminus, has a sequence with homology to the globular domain of the ß and ? chain of fibrinogen. A similar structure has been reported for chicken and mouse tenascins.[4] TN has been independently discovered in a variety of species and tissue types, often in the basement membrane or intercellular spaces. The expression of TN is associated with development and growth, both normal and pathological, with restricted distribution in normal adult tissue. It is synthesized by fibroblasts, chondroblasts, osteocytes, smooth muscle cells and glial cells. It has been proposed that actively growing, migrating and differentiating epithelial sheets can produce factors such as TGF-β to stimulate TN expression in nearby mesenchyme. Neo- expression or increased expression of TN has been found in the stroma of various tumors and during normal tissue repair. Intracytoplasmic TN immunoreactivity has been detected in malignant melanomas and in lung carcinomas. In the breast, expression of the high-molecular-mass TN isoform is a marker of stromal element proliferation, and in invasive breast carcinomas this TN isoform can play a role in generating a permissive environment for proliferation, invasion and metastasis of neoplastic epithelial cells.[5,6] Human and chicken TN contain an RGD sequence which may function in cell adhesion and it seems likely that TN mediates cell attachment through an RGD-dependent integrin receptor.[7] Mouse TN does not contain an RGD sequence in the third type III repeat implicated in cell attachment, or in any other positions.[8] Monoclonal antibody reacting specifically with tenascin is an essential tool for the localization, identification and studies on the role of the molecule in epithelial-mesenchymal and neuronal-glial interactions.[9,10]

Uses

Monoclonal Anti-Human Tenascin may be used for the localization of tenascin and the study of the role of tenascin in epithelial-mesenchymal interactions using various immunochemical assays such as ELISA, RIA, immunoblot, dot blot, immunohistology and immuno-cytochemistry.

Storage

For continuous use, store at 2-8 °C for up to one month. For extended storage, solution may be frozen in working aliquots. Repeated freezing and thawing is **not** recommended. Storage in "frost-free" freezers is **not** recommended. If slight turbidity occurs upon prolonged storage, clarify by centrifugation before use.

References

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4. Carnemolla, B., et al., Eur. J. Biochem., **205**, 561 (1992).
5. Natali, P., et al., Int. J. Cancer, **47**, 811 (1991).
6. Borsi, L., et al., Int. J. Cancer, **52**, 688 (1992).
7. Bourdon, M., and Ruoslahti, E., J. Cell Biol., **108**, 1149 (1989).
8. Weller, A., et al., J. Cell Biol., **112**, 355 (1991).
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*Due to the sodium azide content a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazards and safe handling practices.

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