Monoclonal Antibody to Fibroblasts (Pan Reticular) - Purified

Alternate names: Fibroblast Marker, Fibroblasten

Catalog No.: BM4018

Quantity: 0.2 mg

Concentration: 0.4 mg/ml (after reconstitution)

Background: Connective tissue consists of a ground of glycosaminoglycans, proteoglycans and glycoproteins through which various fibres run. These fibres can be collagenous, elastic or reticular. Reticular fibres are composed from the family of collagen proteins and give tensile strength. These fibres are made by reticular fibroblasts.

Host / Isotype: Rat / IgG2a

Clone: ER-TR7

Immunogen: Murine thymic reticulum.
Epitope: The antigen has not been fully characterized.
The epitope may be part of reticulin.

Format: **State:** Lyophilized purified Ig fraction
Purification: Affinity Chromatography
Buffer System: Stock solution contains PBS, pH 7.2 with 5 mg/ml BSA as a stabilizer and 0.09% Sodium Azide as preservative
Reconstitution: Restore with 0.5 ml distilled water.

Applications: **Immunofluorescence.**
Immunohistochemistry on Frozen Sections: 1 µg/ml (1/400) freshly prepared for Mouse tissue and 4 µg/ml (1/100) on Human/Porcine tissue.
Recommended Positive Control: Mouse spleen.
Does not react on routinely processed Paraffin Sections.
Has been described to work in **FACS.**
Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

Specificity: Reacts with Mouse reticular fibroblasts, reticular fibres and Human tonsil.
ER-TR7 detects an antigen present in and produced by reticular fibroblasts. The recognized antigen is most likely distinct from laminin, fibronectin, collagen types I-IV, heparan sulfate proteoglycan, entactin, and nidogen.
The antibody is useful to stain the microanatomy of various organs, in particular the connective tissue framework in lymphoid organs. The antibody also stains subendothelial deposits in the plaque area of atherosclerotic plaques.
Antigen Distribution
Isolated Cells: The antigen is found in the cytoplasm of fibroblast cell lines.

Tissue Sections: The antigen is expressed in connective tissues which form a supporting network between parenchymal cells of all organs tested so far (see table below). Thus, the supportive mesenchymal structures of larger vessels can be studied. In spleen, a very clear delineation of red and white pulp is obtained. Capsule, sinuses, follicules, paracortex and medullary cords are also clearly delineated in lymph nodes.

Species Reactivity: **Tested:** Mouse (Reticular Fibroblasts, Reticular Fibres), Pig and Human.

Storage:
Store the lyophilized antibody at 2-8°C.
Freeze stock solution and aliquots thereof at -20°C.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.

Product Citation:
1. Beom K. Choi, Young H. Kim, Patrick M. Kwon, Sang C. Lee, Sang W. Kang, Moon S. Kim, Myoung J. Lee, and Byoung S. Kwon. 4-1BB Functions As a Survival Factor in Dendritic Cells. J. Immunol., Apr 2009; 182: 4107-4115.
2. Daniela Malan, Michael Reppel, Radoslaw Dobrowolski, Wilhelm Roell, Neil Smyth, Juergen Hescheler, Mats Paulsson, Wilhelm Bloch, and Bernd K. Fleischmann. Lack of Laminin 1 In ES Cell-Derived Cardiomyocytes Causes Inhomogeneous Electrical Spreading Despite Intact Differentiation And Function. Stem Cells, Jan 2009; 27: 88-99.
3. Ariel H. Achtman, Uta E. Höpken, Carola Bernert, and Martin Lipp CCR7-deficient mice develop atypically persistent germinal centers in response to thymus-independent type 2 antigens. J. Leukoc. Biol., Mar 2009; 85: 409-417.
4. Javier Rangel-Moreno, Juan E. Moyron-Quiroz, Louise Hartson, Kim Kusser, and Troy D. Randall. Pulmonary expression of CXC chemokine ligand 13, CC chemokine ligand 19, and CC chemokine ligand 21 is essential for local immunity to influenza PNAS, Jun 2007; 104: 10577-10582.
5. Javier Rangel-Moreno, Juan Moyron-Quiroz, Kim Kusser, Louise Hartson, Hideki Nakano, and Troy D. Randall. Role of CXC Chemokine Ligand 13, CC Chemokine Ligand (CCL) 19, and CCL21 in the Organization and Function of Nasal-Associated Lymphoid Tissue. J. Immunol., Oct 2005; 175: 4904-4913.
6. Marc Bajénoff, Nicolas Glaichenhaus, and Ronald N. Germain Fibroblastic Reticular Cells Guide T Lymphocyte Entry into and Migration within the Splenic T Cell Zone J. Immunol., Sep 2008; 181: 3947-3954.
7. Marc Bajénoff and Ronald N. Germain: B-cell follicle development remodels the conduit system and allows soluble antigen delivery to follicular dendritic cells; Blood, Dec 2009; 114: 4989-4997.
8. Armin Rehm, Angela Mensen, Kristina Schradi, Kerstin Gerlach, Stefanie Wittstock, Susann Winter, Gilbert Büchner, Bernd Dörken, Martin Lipp, and Uta E. Höpken: Cooperative function of CCR7 and lymphotoxin in the formation of a lymphoma-permissive niche within murine secondary lymphoid organs; Blood, Jul 2011; 118: 1020-1033.
9. Cyril Mionnet, Stéphanie L. Sanos, Isabelle Mondor, Audrey Jorquera, Jean-Pierre Laugier, Ronald N. Germain, and Marc Bajénoff: High endothelial venules as traffic control points maintaining lymphocyte population homeostasis in lymph nodes; Blood, Dec 2011; 118: 6115 - 6122.
10. Immanuel Rode and Thomas Boehm: Regenerative capacity of adult cortical thymic epithelial cells; PNAS, Feb 2012; 109: 3463 - 3468.

General References:
1. Van Vlieth, E., M. Melis, J.M.Foidart, W. van Ewijk: Reticular fibroblasts in peripheral lymphoid organs identified by a monoclonal antibody. J Histochem Cytochem 34: 883-890. (1986)

Protocols:
Protocol with frozen, ice-cold acetone-fixed sections:
(The whole procedure is performed at room temperature)
1. Wash in PBS
2. Block endogenous peroxidase

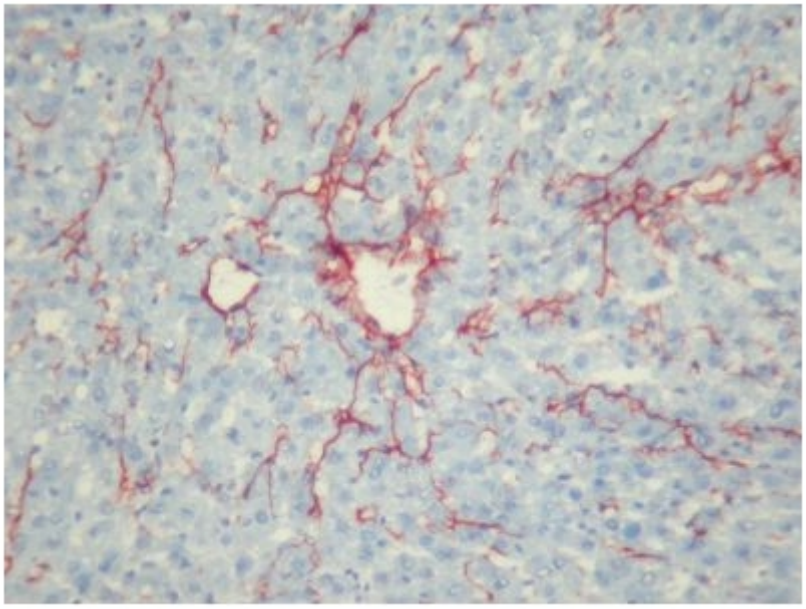
3. Wash in PBS
4. Block with 10% normal goat serum in PBS for 30min. in a humid chamber
5. Incubate with primary antibody (dilution see datasheet) for 1h in a humid chamber
6. Wash in PBS
7. Incubate with secondary antibody (peroxidase-conjugated goat anti rat IgG (H+L) minimal-cross reaction to mouse) for 1h in a humid chamber
8. Wash in PBS
9. Incubate with AEC substrate (3-amino-9-ethylcarbazol) for 12min.
10. Wash in PBS
11. Counterstain with Mayers hemalum

Pictures:

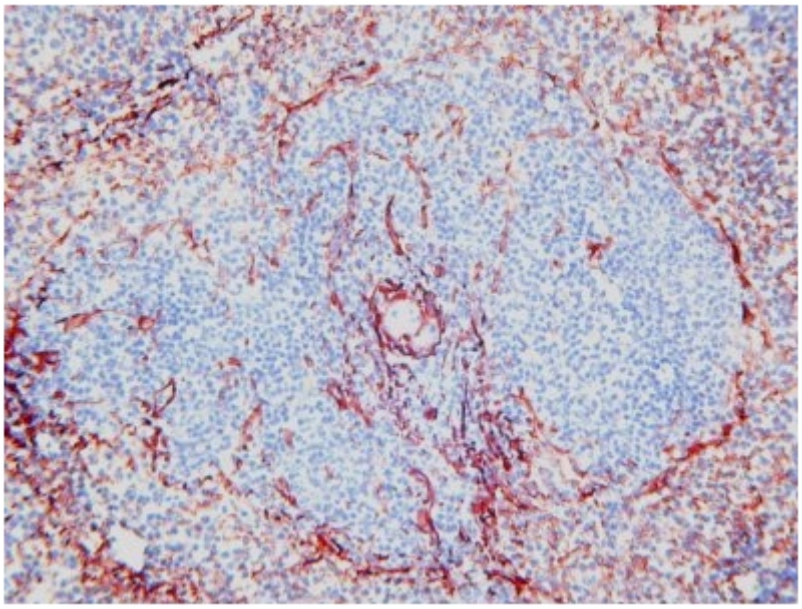
Organ	Reactivity with
Submadibular salivary gland	Interstitial CT[1)2)] between acini
Stomach	Lamina propria, CT of muscularis, serosa
Small intestine	Lamina propria, CT of muscularis, serosa
Pancreas	Interstitial CT between acini
Liver	Lining of liver cords
Skin	Dermis
Ear	Extracellular matrix of cartilage, dermis
Striated muscle	Interstitial CT between muscle fibres
Cardiac muscle	Interstitial CT between muscle fibres
Tendon	Fibres
Ovary	Connective tissue stroma, tunica albuginea
Testis	Interstitial CT between seminiferous tubuli
Kidney	Glomeruli and interstitial CT between tubuli
Brain	Blood vessels, meninges

[1)] CT= connective tissue
[2)] In tissues tested ER-TR7 reacts with blood vessel walls and capsules

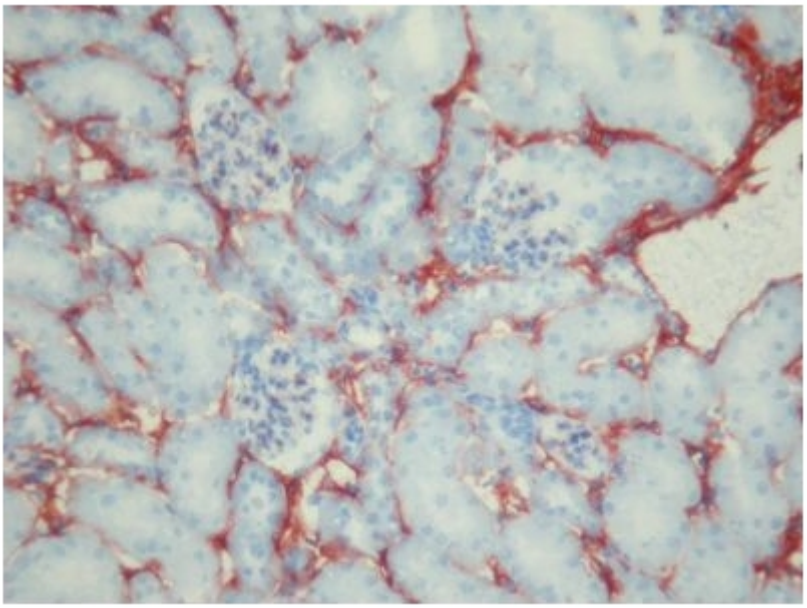
Reactivity of ER-TR7 with Various Non-Lymphoid Organs Of the Mouse.



Immunohistochemistry on mouse Liver frozen sections using fibroblast antibody clone ER-TR7.



Immunohistochemistry on mouse Spleen frozen sections using fibroblast antibody clone ER-TR7.



Immunohistochemistry on mouse Kidney frozen sections using fibroblast antibody clone ER-TR7.

Recommended Isotype Controls: SM15P, SM15PX