Monoclonal Mouse Antibody to Human Alpha-Smooth Muscle Actin

Description:

Immunogen: N-Terminal decapeptide of alpha smooth muscle is a form of actin; acetylated at the N-terminus and conjugated to KLH at the C-terminus.

Clone: 1A4

Isotype: IgG 2a/K

Format: This antibody has been pretitered and quality controlled to work on formalin-fixed paraffin-embedded as well as acetone fixed cryostat tissue sections. No further titration is required.

Specificity: Recognizes the $\alpha$-smooth muscle isoform of actin. It shows no cross reaction with actin from fibroblasts ($\beta$- and $\gamma$-cytoplasmic), striated muscle ($\alpha$-sarcometric), and myocardium ($\alpha$-myocardial). Its epitope is composed of the acetyl group and the first 4 amino acids on the N-terminal end of the peptidic chain of $\alpha$-smooth actin. ScyTek's 1A4 stains smooth muscle cells in vessel walls, gut wall, and myometrium. Myoepithelial cells in breast and salivary gland are also stained as they also contain this actin. This Mab is reportedly useful for identifying tumors arising from smooth muscle and myoepithelial cells.

Species Reactivity: Human, Baboon, Cow, Rabbit, Mouse, Rat, Chicken; Others-not known

Positive Control: Blood vessels

Cellular Localization: Cytoplasmic

Uses/Limitations: Immunofluorescence. Western Blotting. Immunohistochemistry (frozen & formalin/paraffin) (Staining of formalin/paraffin tissues is enhanced by boiling the tissue sections in 10mM citrate buffer, pH 6.0, for 10 minutes followed by cooling at room temperature for 20 minutes.) For Research Use Only. Do not use past expiration date.

Storage: 2-8º Centigrade.
Procedure:
ScyTek suggests an incubation period of 30 minutes at room temperature. However, depending upon the fixation conditions and the staining system employed, optimal incubation should be determined by the user.

Precautions:
Contains Sodium Azide as a preservative.
Do not pipette by mouth.

References:
2. Cremona O; Savoia P; Marchisio PC; Gabbiani G; Chapponnier C. The alpha 6 and beta 4 integrin subunits are expressed by smooth muscle cells of human small vessels; a new localization in mesenchymal cells. Journal of Histochemistry and Cytochemistry, 1994, 42(9):1221-8.
7. Schurch W; Bochaton-Piallat ML; Geinoz A; d'Amore E; Laurini RN; Cintorino M; Begin LR; Boivin Y; Gabbiani G. All histological types of primary human rhabdomyosarcoma express alpha-cardiac and not alpha-skeletal actin messenger TNA. American Journal of Pathology, 1993, 144:836-16.
17. Desmouliere A; Rubbia-Brandt L; Abdiu A; Walz T; Macieira-Coelho A; Gabbiani G. Alpha-smooth muscle actin is expressed in a subpopulation of cultured and cloned fibroblasts and is modulated by gamma-interferon. Experimental Cell Research, 1992, 201(1):84-71.
20. Pascolini R; Di Rosa I; Fagotti A; Panara F; Gabbiani G. The mammalian anti-alpha-smooth muscle actin monoclonal antibody recognizes an alpha-actin-like protein in planaria (Dugesia lugubris s.l.) Differentiation, 1992, 51(3):177-86.
24. For further references contact the Customer Service Department of ScyTek Laboratories, Inc.