Smoothelin clone R4A

Instructions for Use

Specification:
Smoothelin is a constituent of the smooth muscle cell cytoskeleton protein exclusively found in differentiated smooth muscle cells (SMC). Cells with SMC-like characteristics, such as myofibroblasts and myoepithelial cells, as well as skeletal and cardiac muscle do not contain Smoothelin. To distinguish bladder muscularis mucosae (MM) from muscularis propria (MP) muscle bundles is crucial for accurate staging of bladder carcinoma. Strong Smoothelin expression is nearly exclusively observed in muscularis propria. Therefore, the staining pattern of MP (strongly positive) and MM (negative or weakly positive) makes this technique an attractive diagnostic tool for the sometimes-difficult task of staging bladder urothelial carcinoma such as in transurethral resection specimens of urinary bladder tumors. Differentiating between smooth muscle tumors and other mesenchymal neoplasms of the GI tract can be challenging in small biopsies. Anti-Smoothelin immunostaining can be helpful in differentiating benign (+) from malignant smooth muscle tumors (-), and other mimics (-).

Availability:

Catalog No.	Contents	Volume
ILM1206-C01	Smoothelin	0,1 ml concentrate
ILM1206-C05	Smoothelin	0,5 ml concentrate
ILM1206-C1	Smoothelin	0,1 ml concentrate

Intended use: For Research Use Only

Reactivity: Human, Monkey, Dog, Cat, Pig and Chicken

Clone: R4A

Species of origin: Mouse

Isotype: IgG_1

Control Tissue: Colon

Staining: Cytoplasm > cytoskeleton. Exhibits a filamentous organization.

Immunogen: Cytoskeletal extract of Chicken gizzard

Presentation: Liquid purified Ig fraction with 0.2% BSA and 15mM Sodium Azide

Application and suggested dilutions:
Pretreatment: Heat induced epitope retrieval in 10 mM citrate buffer, pH6.0, or in 50 mM Tris buffer pH9.5, for 20 minutes is required for IHC staining on formalin-fixed, paraffin embedded tissue sections.

- Immunohistochemical staining of formalin-fixed, paraffin embedded tissue section (dilution 1:25).

The optimal dilution for a specific application should be determined by the investigator.

Note: Dilution of the antibody in 10% normal goat serum followed by a goat anti-mouse secondary antibody-based detection is recommended.

Storage & Stability: Store at 2-8 °C. Do not use after expiration date printed on the vial. Do not freeze.

Reference:

1) Kramer, J et al. A novel isoform of the smooth muscle cell differentiation marker smoothelin. J Mol Med 1999; 77:294-8.
2) van der Loop, FT et al. Smoothelin, a novel cytoskeletal protein specific for smooth muscle cells. J Cell Biol 1996; 134:401-411.
3) Maake, C et al. Expression of smoothelin in the normal and the overactive human bladder. J Urol 2006; 175:1152-1157.
4) Jimenez, RE et al. pT1 urothelial carcinoma of the bladder: criteria for diagnosis, pitfalls, and clinical implications. Adv Anat Pathol 2000; 7:13-25.
5) Kuijpers, et al. Cadherin-11 is expressed in detrusor smooth muscle cells and myofibroblasts of normal human bladder. Eur Urol 2007; 52:1213-21.
6) Paner, GP et al. Diagnostic utility of antibody to smoothelin in the distinction of muscularis propria from muscularis mucosae of the urinary bladder: a potential ancillary tool in the pathologic staging of invasive urothelial carcinoma. Am J Surg Pathol 2009; 33:91-8.
7) Paner, GP et al. Diagnostic use of antibody to smoothelin in the recognition of muscularis propria in transurethral resection of urinary bladder tumor (TURBT) specimens. Am J Surg Pathol 2010; 34:792-9.
8) Council, L et al. Differential expression of immunohistochemical markers in bladder smooth muscle and myofibroblasts, and the potential utility of desmin, smoothelin, and vimentin in staging of bladder carcinoma. Mod Pathol 2009; 22:639-650.
9) Coco, DP et al. Smoothelin is a specific marker for smooth muscle neoplasms of the gastrointestinal tract. Am J Surg Pathol. 2009 Dec; 33(12):1795-801.