

## Product information

# Anti-Actin, $\alpha$ -Smooth Muscle - FITC antibody, Mouse monoclonal

clone 1A4, purified from hybridoma cell culture

**F3777**

## Product Description

Anti-Actin,  $\alpha$ -Smooth Muscle-FITC is a purified mouse monoclonal antibody conjugated with fluorescein isothiocyanate (FITC) isomer I. Monoclonal Anti-Actin,  $\alpha$ -Smooth Muscle (mouse IgG2a isotype) is derived from the 1A4 hybridoma produced by the fusion of mouse myeloma cells and splenocytes of immunized BALB/c mice. The NH<sub>2</sub> terminal synthetic decapeptide of  $\alpha$ -smooth muscle actin coupled to keyhole limpet hemocyanin (KLH) was used as the immunogen.<sup>1</sup> The isotype is determined by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Cat. No. ISO2.

Anti-Actin,  $\alpha$ -Smooth Muscle specifically recognizes the  $\alpha$ -smooth muscle isoform of actin (42 kDa) by ELISA and immunoblotting.<sup>1</sup> It does not react with the other major actin isoforms present in fibroblasts or epithelial cells ( $\beta$  and  $\gamma$ -cytoplasmic), striated muscle ( $\alpha$ -sarcomeric), myocardium ( $\alpha$ -myo-cardial), or  $\gamma$ -smooth muscle isoform.

Anti-Actin,  $\alpha$ -Smooth Muscle (also known as Anti- $\alpha$ -SM-1) recognizes the  $\alpha$ -smooth muscle isoform of actin. The antibody reacts with normal and neoplastic, human vascular and visceral smooth muscle cells. It reacts with normal myoepithelial cells, pericytes, eye lens cells, hair follicle cells and certain stromal cells in the intestine, testis, lymphoid organs, liver, ovary and bone marrow.<sup>1,2,3,4,5,6</sup> The antibody also reacts with stromal myofibroblasts in hypertrophic scars, and in neoplastic tissues.<sup>7</sup>  $\alpha$ -Smooth muscle actin is transiently co-expressed with sarcomeric  $\alpha$ -actin during myogenesis in chicken and rat embryos.<sup>8,9</sup> It was also found in the ventricular conducting tract of adult mammalian heart. It is expressed in leiomyomas, leiomyosarcomas and leiomyoblastomas, as well as in a proportion of rhabdomyosarcomas.<sup>10,11</sup> The antibody cross reacts with actin expressing cells in human, bovine, goat, sheep, rabbit, cat, dog, mouse, rat, hamster, guinea pig, chicken, viper, lizard, frog, snail and crayfish tissues.

It can be used for staining acetone-fixed, frozen sections, smears, cytopins and EM preparations. The FITC conjugated monoclonal anti- $\alpha$  smooth muscle actin is especially useful for direct staining of tissues and cells.

Monoclonal Anti-Actin,  $\alpha$ -Smooth Muscle-FITC may be used for:

1. Identification of developing and adult smooth muscle pericytes and myoepithelial cells.
2. Detection and characterization of smooth muscle tumors, glomus tumors and certain myoepithelial tumors, osteosarcomas and soft tissue tumors.
3. Differentiation between glomus tumors and hemangiopericytomas, and between epitheliosis and intraductal breast carcinoma.
4. Studies on the expression of actins in cultured cells.
5. Detection of  $\alpha$ -smooth muscle actin positive cells in hepatic fibrosis, bone marrow fibrosis, experimental gliosis, atherosclerosis, pulmonary hypertension, and wound healing.

### Reagents

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 1% BSA with 15 mM sodium azide as a preservative.

### Precautions/Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

### Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight

turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Protect from prolonged exposure to light.

### Product Profile

**Immunohistochemistry:** A minimum working dilution of 1:500 was determined using formalin-fixed, paraffin-embedded sections of human tonsil or appendix.

**Note:** In order to obtain best results in different techniques and preparations, it is recommended that each individual user determine their optimum working dilutions by titration assay.

### References

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