

Store at  
-20°C

#56856

# $\alpha$ -Smooth Muscle Actin (1A4) Mouse mAb (IHC Formulated)

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orders@cellsignal.comEntrez-Gene ID #59  
UniProt ID #P62736

rev. 05/21/18

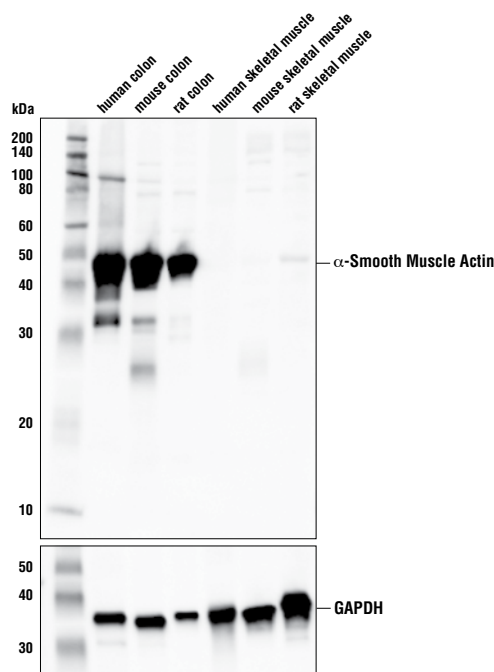
**For Research Use Only. Not For Use In Diagnostic Procedures.****Applications**  
W, IP, IHC-P  
Endogenous**Species Cross-Reactivity\***  
H, M, R**Molecular Wt.**  
42 kDa**Isotype**  
Mouse IgG2a\*\*

**Background:** Actin proteins are major components of the eukaryotic cytoskeleton. At least six vertebrate actin isoforms have been identified. The cytoplasmic  $\beta$ - and  $\gamma$ -actin proteins are referred to as "non-muscle" actin proteins as they are predominantly expressed in non-muscle cells where they control cell structure and motility (1). The  $\alpha$ -cardiac and  $\alpha$ -skeletal actin proteins are expressed in striated cardiac and skeletal muscles, respectively. The smooth muscle  $\alpha$ -actin and  $\gamma$ -actin proteins are found primarily in vascular smooth muscle and enteric smooth muscle, respectively. The  $\alpha$ -smooth muscle actin (ACTA2) is also known as aortic smooth muscle actin. These actin isoforms regulate the contractile potential of muscle cells (1).

**Background References:**(1) Herman, I.M. (1993) *Curr Opin Cell Biol* 5, 48-55.

**Specificity/Sensitivity:**  $\alpha$ -Smooth Muscle Actin (1A4) Mouse mAb (IHC Formulated) recognizes endogenous levels of total  $\alpha$ -smooth muscle actin protein.

**Source/Purification:** Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of human  $\alpha$ -smooth muscle protein.



Western blot analysis of extracts from various tissues using  $\alpha$ -Smooth Muscle Actin (1A4) Mouse mAb (IHC Formulated) (upper) and GAPDH (D16H11) XP<sup>®</sup> Rabbit mAb #5174 (lower). As expected, skeletal muscle samples are negative for  $\alpha$ -smooth muscle actin.

**Storage:** Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100  $\mu$ g/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at  $-20^{\circ}\text{C}$ . Do not aliquot the antibody.

\*Species cross-reactivity is determined by western blot.

\*\*Anti-mouse secondary antibodies must be used to detect this antibody.

**Recommended Antibody Dilutions:**

Western blotting	1:1000
Immunoprecipitation	1:100
Immunohistochemistry (Paraffin)	1:250†
Unmasking buffer:	SignalStain <sup>®</sup> Citrate Unmasking Solution (10X) #14746
Antibody diluent:	SignalStain <sup>®</sup> Antibody Diluent #8112
Detection reagent:	SignalStain <sup>®</sup> Boost (HRP, Mouse) #8125

†Optimal IHC dilutions determined using SignalStain<sup>®</sup> Boost

For product specific protocols and a complete listing of recommended companion products please see the product web page at [www.cellsignal.com](http://www.cellsignal.com)

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**IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% BSA, 1X TBS, 0.1% Tween<sup>®</sup>20 at 4°C with gentle shaking, overnight.**

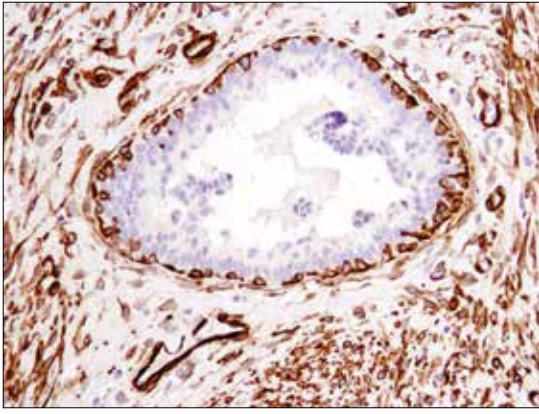
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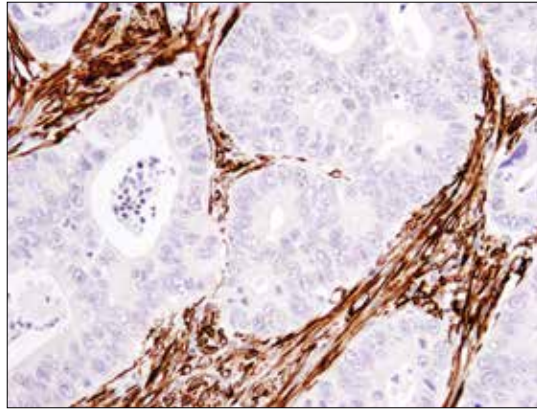
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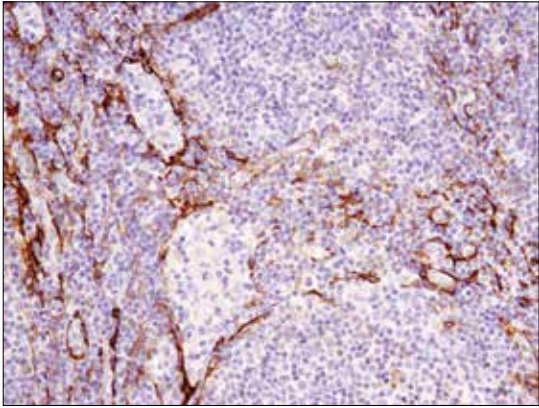
**Applications:** W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide **Species Cross-Reactivity:** H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected **Species** enclosed in parentheses are predicted to react based on 100% homology.



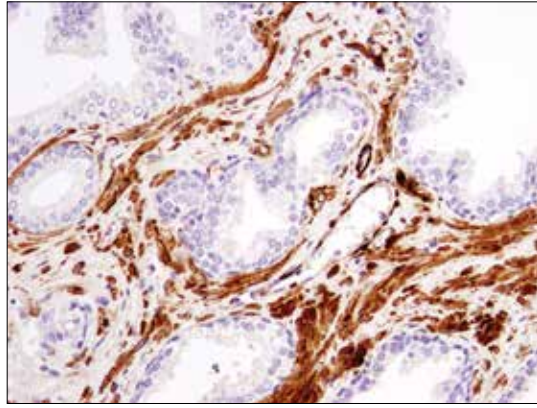
*Immunohistochemical analysis of paraffin-embedded human ductal carcinoma of the breast using  $\alpha$ -Smooth Muscle Actin (1A4) Mouse mAb (IHC Formulated).*



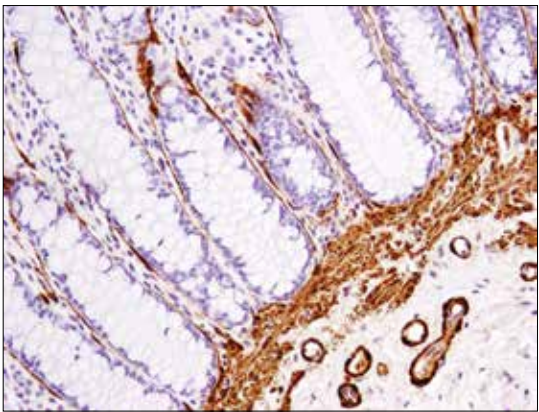
*Immunohistochemical analysis of paraffin-embedded human colon carcinoma using  $\alpha$ -Smooth Muscle Actin (1A4) Mouse mAb (IHC Formulated).*



*Immunohistochemical analysis of paraffin-embedded human Non-Hodgkin's lymphoma using  $\alpha$ -Smooth Muscle Actin (1A4) Mouse mAb (IHC Formulated).*



*Immunohistochemical analysis of paraffin-embedded human prostate carcinoma using  $\alpha$ -Smooth Muscle Actin (1A4) Mouse mAb (IHC Formulated).*



*Immunohistochemical analysis of paraffin-embedded normal human colon using  $\alpha$ -Smooth Muscle Actin (1A4) Mouse mAb (IHC Formulated).*

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