ARG52485
anti-alpha smooth muscle Actin antibody [1A4]

Package: 100 µl, 50 µl
Store at: -20°C

Summary

Product Description	Mouse Monoclonal antibody [1A4] recognizes alpha smooth muscle Actin (SMA)
Tested Reactivity	Hu, Ms, Rat, Pig, Rb, Sheep
Tested Application	ELISA, ICC/IF, IHC-Fr, IHC-P, WB
Host	Mouse
Clonality	Monoclonal
Clone	1A4
Isotype	IgG1, kappa
Target Name	alpha smooth muscle Actin
Species	Human
Immunogen	Synthetic peptide from N-terminus of human alpha smooth muscle isoform of actin.
Conjugation	Un-conjugated
Alternate Names	Cell growth-inhibiting gene 46 protein; MYMY5; ACTSA; Alpha-actin-2; Actin, aortic smooth muscle; AAT6

Application Instructions

Application table

Application	Dilution
ELISA	Assay-Dependent
ICC/IF	Assay-Dependent
IHC-Fr	Assay-Dependent
IHC-P	1:100 - 1:200
WB	1:100 - 1:300

Application Note	IHC-P: Incubation time: overnight at 4°C or 30-60 min at RT. * The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.
Positive Control	Leiomyoma, Small Intestine (Smooth Muscle)

Properties

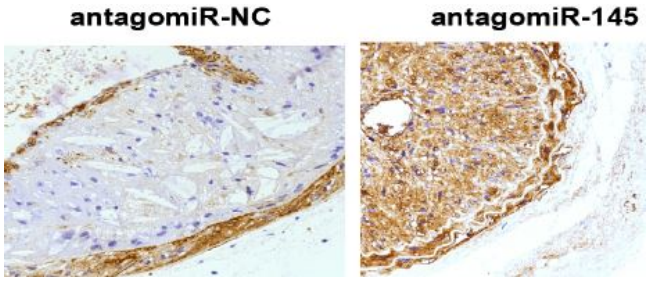
Form	Liquid
Buffer	PBS and 0.1% Sodium azide.
Preservative	0.1% Sodium azide
Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C or below. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed

	before use.
Note	For laboratory research only, not for drug, diagnostic or other use.

Bioinformation

Background	This antibody stains smooth muscle cells in vessel walls, gut wall, and myometrium. Myoepithelial cells in breast and salivary gland are also stained. It reacts with tumors arising from smooth muscles and myoepithelial cells. Actin from fibroblasts (beta- and gamma-cytoplasmic), striated muscle (alpha-sarcomeric), and myocardium (alpha-myocardial) are not stained.
Highlight	Related Antibody Duos and Panels: ARG30293 Smooth Muscle Marker Related products: alpha smooth muscle Actin antibodies; alpha smooth muscle Actin Duos / Panels; Anti-Mouse IgG secondary antibodies; Related news: New antibody panels for Myofibroblasts and CAFs Besides tumor suppression, what's p53 busy for during embryogenesis? New antibody panels and duos for Tumor immune microenvironment Anti-SerpinB9 therapy, a new strategy for cancer therapy
Research Area	Cell Biology and Cellular Response antibody; Controls and Markers antibody; Signaling Transduction antibody; Cancer-associated fibroblast antibody; Smooth Muscle Marker antibody; CAF Marker antibody; Mural cell Marker antibody; Myofibroblast Marker antibody; Angiogenesis Study antibody; Microvascular Density Study antibody
Calculated Mw	42 kDa
PTM	Oxidation of Met-46 and Met-49 by MICALs (MICAL1, MICAL2 or MICAL3) to form methionine sulfoxide promotes actin filament depolymerization. MICAL1 and MICAL2 produce the (R)-S-oxide form. The (R)-S-oxide form is reverted by MSRB1 and MSRB2, which promote actin repolymerization (By similarity). Monomethylation at Lys-86 (K84me1) regulates actin-myosin interaction and actomyosin-dependent processes. Demethylation by ALKBH4 is required for maintaining actomyosin dynamics supporting normal cleavage furrow ingression during cytokinesis and cell migration. (Microbial infection) Monomeric actin is cross-linked by V.cholerae toxins RtxA and VgrG1 in case of infection: bacterial toxins mediate the cross-link between Lys-52 of one monomer and Glu-272 of another actin monomer, resulting in formation of highly toxic actin oligomers that cause cell rounding (PubMed:19015515). The toxin can be highly efficient at very low concentrations by acting on formin homology family proteins: toxic actin oligomers bind with high affinity to formins and adversely affect both nucleation and elongation abilities of formins, causing their potent inhibition in both profilin-dependent and independent manners (PubMed:26228148).
Cellular Localization	Cytoplasm

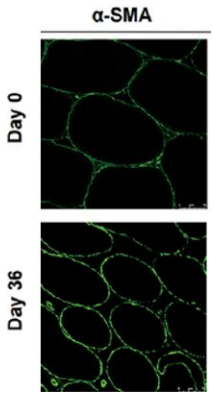
Images



ARG52485 anti-alpha smooth muscle Actin antibody [1A4] IHC-P image

Immunohistochemistry: Human VSMCs stained with ARG52485 anti-alpha smooth muscle Actin antibody [1A4].

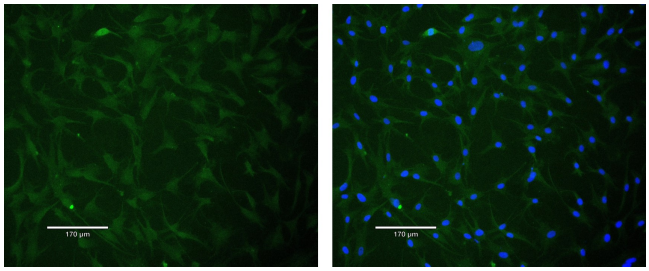
From Yunjuan Jiao et al. Preprint- (2021), doi: 10-2139-ssrn-3817416, Fig. 1. L.



ARG52485 anti-alpha smooth muscle Actin antibody [1A4] IHC-P image

Immunohistochemistry: Mouse testis stained with ARG52485 anti-alpha smooth muscle Actin antibody [1A4].

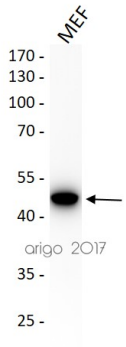
From Xie Y et al. Stem Cells Dev- (2020), doi: 10.1089/scd.2019.0220, Fig. 1. D.



ARG52485 anti-alpha smooth muscle Actin antibody [1A4] ICC/IF image

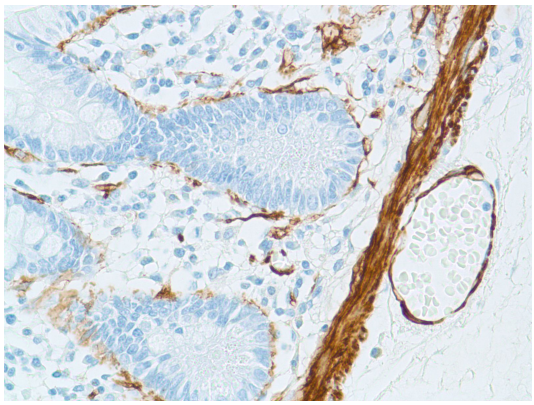
Immunofluorescence: Rabbit skeletal muscle stained with ARG52485 anti-alpha smooth muscle Actin antibody [1A4] at 1:100 dilution.

Secondary antibody: ARG23757 Goat anti-Mouse IgG (H+L) antibody (FITC), pre-adsorbed



ARG52485 anti-alpha smooth muscle Actin antibody [1A4] WB image

Western blot: 30 µg of MEF cell lysate stained with anti-alpha smooth muscle Actin antibody [1A4] at 1:200 dilution.



ARG52485 anti-Actin-Smooth Muscle antibody [1A4] IHC-P image

Immunohistochemistry: Human Small Intestine stained with Actin-Smooth Muscle antibody [1A4] (ARG52485)