Product Datasheet

alpha-Smooth Muscle Actin Antibody (SPM332) [Allophycocyanin]

NBP2-34760APC

Unit Size: 0.1 ml

Store at 4C in the dark.

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Updated 10/23/2024 v.20.1

NBP2-34760APC

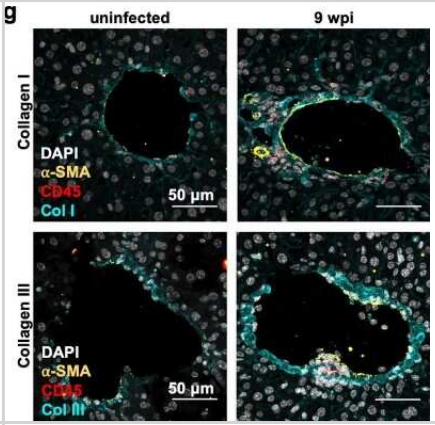
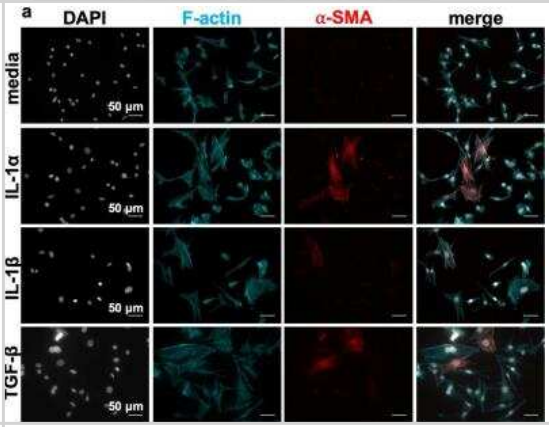
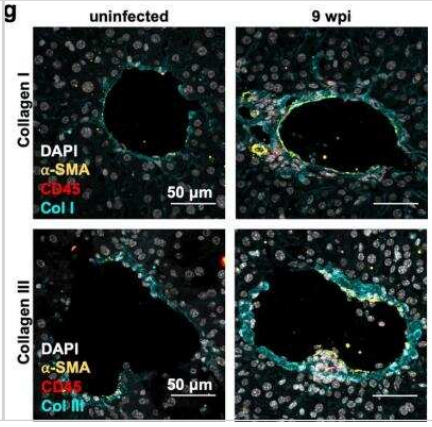
alpha-Smooth Muscle Actin Antibody (SPM332) [Allophycocyanin]

Product Information	
Unit Size	0.1 ml
Concentration	Please see the vial label for concentration. If unlisted please contact technical services.
Storage	Store at 4C in the dark.
Clonality	Monoclonal
Clone	SPM332
Preservative	0.05% Sodium Azide
Isotype	IgG2a Kappa
Conjugate	Allophycocyanin
Purity	Protein A or G purified
Buffer	PBS

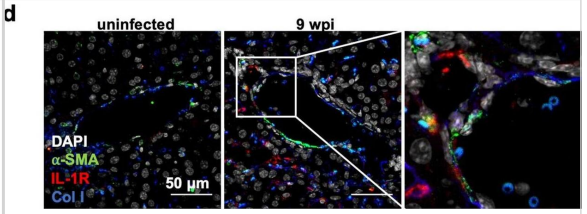
Product Description	
Description	This conjugate is made on demand. Actual recovery may vary from the stated volume of this product. The volume will be greater than or equal to the unit size stated on the datasheet.
Host	Mouse
Gene ID	59
Gene Symbol	ACTA2
Species	Human, Mouse, Rat, Porcine, Bovine, Canine, Chicken, Feline, Guinea Pig, Goat, Baboon, Monkey, Rabbit, Sheep
Marker	Leiomyosarcoma Marker
Specificity/Sensitivity	Actin is a major component of the cytoskeleton and is present in most cell types. This monoclonal antibody is highly specific to actin from smooth muscles. Its epitope lies in the first four N-terminal amino acids. This monoclonal antibody does not stain cardiac or skeletal muscle; however, it does stain myofibroblasts and myoepithelial cells. This antibody could be used together with anti-muscle specific actin and myogenin in making a diagnosis of smooth muscle and skeletal muscle tumors. In most cases of rhabdomyosarcoma, this antibody yields negative results whereas anti-muscle specific actin and myogenin are positive. Leiomyosarcomas are positive only with anti-muscle specific actin and anti-smooth muscle actin and are negative with anti-myogenin.
Immunogen	N-Terminal decapeptide of alpha smooth muscle isoform of actin and conjugated to KLH. (Uniprot: P62736)

Product Application Details	
Applications	Western Blot, Flow Cytometry, Flow (Intracellular), Immunocytochemistry/ Immunofluorescence, Immunohistochemistry, Immunohistochemistry-Paraffin, CyTOF-ready
Recommended Dilutions	Western Blot, Flow Cytometry, Immunohistochemistry, Immunocytochemistry/ Immunofluorescence, Immunohistochemistry-Paraffin, Flow (Intracellular), CyTOF-ready
Application Notes	Use in Immunofluorescence reported by customer review.

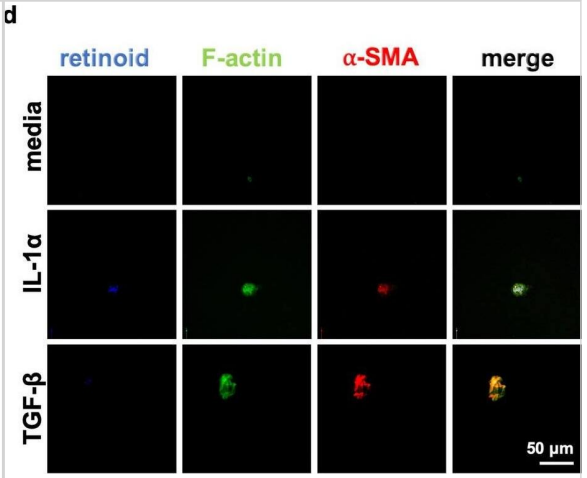
Images

Immunohistochemistry: alpha-Smooth Muscle Actin Antibody (SPM332) [Allophycocyanin] [NBP2-34760APC] - Livers were harvested at 9 wpi, formalin-fixed, and then cryosectioned and stained for markers of inflammation and liver fibrosis. Maximum intensity projections of 12-17 um thick liver sections with immunofluorescently labeled nuclei (DAPI white) alpha-smooth muscle actin NBP2-34760APC (yellow), CD45 (red) and Collagen I NB600-408 (top) or Collagen III/COL3A1 NB600-594 (bottom) (blue) in the liver of uninfected or 9 wpi WT mice. Scale bars represent 50 um. Image collected and cropped by CiteAb from the following publication (//pubmed.ncbi.nlm.nih.gov/32973293/) licensed under a CC-BY license.	
Immunohistochemistry: alpha-Smooth Muscle Actin Antibody (SPM332) [Allophycocyanin] [NBP2-34760APC] - IL-1 induces contractility and alpha smooth muscle actin expression in murine embryonic fibroblasts and primary hepatic stellate cells. MEFs were incubated with media, 10 ng/mL IL-1 alpha, 150 pg/mL IL-1 beta or 10 ng/mL TGFbeta-1 for 48 h. After fixation, MEFs were stained for F-actin, and alpha-smooth muscle actin (NBP2-34760APC). Image collected and cropped by CiteAb from the following publication (//pubmed.ncbi.nlm.nih.gov/32973293/) licensed under a CC-BY license.	
Immunohistochemistry: alpha-Smooth Muscle Actin Antibody (SPM332) [Allophycocyanin] [NBP2-34760APC] - Livers were harvested at 9 wpi, formalin-fixed, and then cryosectioned and stained for markers of inflammation and liver fibrosis. Maximum intensity projections of 12-17 um thick liver sections with immunofluorescently labeled nuclei (DAPI white) alpha-smooth muscle actin NBP2-34760APC (yellow), CD45 (red) and Collagen1 alpha (top) or Collagen III (bottom) (blue) in the liver of uninfected or 9 wpi WT mice. Scale bars represent 50 um. Image collected and cropped by CiteAb from the following publication (//pubmed.ncbi.nlm.nih.gov/32973293/) licensed under a CC-BY license.	

Cells expressing IL-1□ & IL-1R are observed in the fibrotic liver environment. (a) Cytokines in tissue lysates from mice at 9 wpi were measured by ELISA in liver. Data are presented as fold change relative to the mean of uninfected levels. N = 11–12 mice per group, pooled from three independent experiments. (b) IL-1α levels in the sera at 9 wpi measured by ELISA. N = 9–14 mice per group, pooled from four independent experiments. (c) Immunofluorescence labeling of nuclei (DAPI white), IL-1□ (green), CD45 (red), & collagen1□1 (blue) in the liver of UI or 9 wpi WT mice. Number of cells staining positive for CD45 and/or IL-1□, average 2–3 fields of view where immune infiltrate was present from 3 mice per condition are quantified on the right. Error bars are standard deviation. (d) Immunofluorescent labeling of nuclei (DAPI white), □-smooth muscle actin (green), IL-1R (red), & collagen1□ (blue) in the liver of uninfected or 9 wpi WT. Inset, arrow head represents □-smooth muscle actin/IL-1R co-staining cells (arrow heads). Number of cells staining positive for IL-1R and/or □-SMA, average of 4–8 fields of view from 3 mice are quantified on the right. Error bars are standard deviation. (c,d) represent maximum intensity projections of 9–13 µm thick z-stacks. Scale bar represents 50 µm. Error bars are standard error of the mean except where noted otherwise. *P < 0.05; **P < 0.01; ***P < 0.001 by unpaired Student's t test. Image collected & cropped by CiteAb from the following publication (https://pubmed.ncbi.nlm.nih.gov/32973293), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Immunocytochemistry/ Immunofluorescence: alpha-Smooth Muscle Actin Antibody (SPM332) [Allophycocyanin] [NBP2-34760APC] - IL-1 induces contractility & alpha smooth muscle actin expression in murine embryonic fibroblasts & primary hepatic stellate cells. (a–c) MEFs were incubated with media, 10 ng/mL IL-1α, 150 pg/mL IL-1β or 10 ng/mL TGFβ-1 for 48 h. After fixation, MEFs were stained for F-actin, & alpha-smooth muscle actin (α-SMA). Cell spreading was quantified in (b), & levels of α-SMA expression were quantified in (c) as the mean relative to untreated for each biological replicate (left panels) or the single cell data pooled from three biological replicate experiments (right panels). For each experiment, 50–200 cells/group were analyzed. (d–f) Primary hepatic stellate cells (HSCs) were isolated from uninfected mouse livers, & FACS-sorted based on endogenous retinoid fluorescence (d). (e,f) HSCs were seeded onto 4 kPa hydrogels coated with 10 µg/mL of fibronectin & cultured with 10 ng/mL IL-1α, 10 ng/mL TGF-β, or media alone for 48 h & then fixed & stained for F-actin & α-SMA & imaged by confocal microscopy. Scale bar represents 50 µm. Total cell area quantified in (e) & levels of α-SMA expression were quantified in terms of pixels/cell in (f) as the mean relative to untreated for each biological replicate (left panels) or the single cell data pooled from four biological replicate experiments (right panels). Error bars are standard error of the mean. For the left panels, data were compared by one-way ANOVA with Bonferroni's multiple comparisons test. Image collected & cropped by CiteAb from the following publication (https://pubmed.ncbi.nlm.nih.gov/32973293), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Publications

Arebro J, Towle R, Lee CM et al. Extracellular vesicles promote activation of pro-inflammatory cancer-associated fibroblasts in oral cancer Frontiers in cell and developmental biology 2023-09-07 [PMID: 37745296]

Melchor, S J, Hatter, J A Et al. T. gondii infection induces IL-1R dependent chronic cachexia and perivascular fibrosis in the liver and skeletal muscle. Sci Rep 2020-09-24 [PMID: 32973293] (FLOW, Human)

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Products Related to NBP2-34760APC

NBP1-96981APC	Mouse IgG2a Kappa Isotype Control (M2AK) [Allophycocyanin]
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DVE00	VEGF [HRP]
NBP2-66429	Mouse alpha-Smooth Muscle Actin ELISA Kit (Colorimetric)

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