

# Product Datasheet

## alpha-Smooth Muscle Actin Antibody (1A4/asm-1) - Azide and BSA Free NBP2-34522-0.1mg

Unit Size: 0.1 mg

Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.

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**NBP2-34522-0.1mg**

alpha-Smooth Muscle Actin Antibody (1A4/asm-1) - Azide and BSA Free

Product Information	
Unit Size	0.1 mg
Concentration	1.0 mg/ml
Storage	Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.
Clonality	Monoclonal
Clone	1A4/asm-1
Preservative	No Preservative
Isotype	IgG2a Kappa
Purity	Protein A purified
Buffer	PBS
Target Molecular Weight	42 kDa

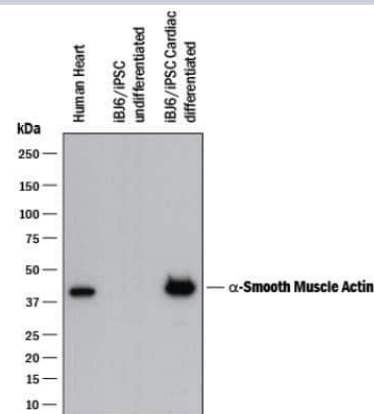
Product Description	
Description	Novus Biologicals Mouse alpha-Smooth Muscle Actin Antibody (1A4/asm-1) - Azide and BSA Free (NBP2-33006) is a monoclonal antibody validated for use in IHC, WB, ELISA, Flow, ICC/IF, Simple Western and IP. Anti-alpha-Smooth Muscle Actin Antibody: Cited in 11 publications. All Novus Biologicals antibodies are covered by our 100% guarantee.
Host	Mouse
Gene ID	59
Gene Symbol	ACTA2
Species	Human, Mouse, Rat, Porcine, Bovine, Canine, Chicken, Feline, Guinea Pig, Goat, Baboon, Monkey, Rabbit, Sheep
Reactivity Notes	Feline reactivity reported from a verified customer review.
Marker	Leiomyosarcoma Marker
Specificity/Sensitivity	Actin is a major component of the cytoskeleton and is present in most cell types. This MAb is highly specific to actin from smooth muscles. Its epitope lies in the first four N-terminal amino acids. This MAb 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	Alpha-Smooth Muscle Actin Antibody (1A4/asm-1) is made to the N-Terminal decapeptide of Alpha smooth muscle isoform of actin and conjugated to KLH.

Product Application Details	
Applications	Western Blot, Simple Western, Immunohistochemistry-Paraffin, ELISA, Flow Cytometry, Flow (Intracellular), Immunocytochemistry/ Immunofluorescence, Immunohistochemistry, Immunohistochemistry-Frozen, Immunoprecipitation, CyTOF-ready

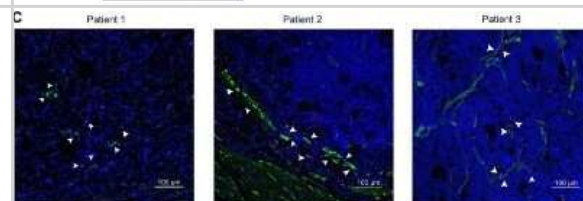
<b>Recommended Dilutions</b>	Western Blot, Simple Western, Flow Cytometry, ELISA 1-5ug/ml for coating, Immunohistochemistry, Immunocytochemistry/ Immunofluorescence 0.5-1ug/ml, Immunoprecipitation 0.5-1ug/500ug protein lysate, Immunohistochemistry-Paraffin 0.5-1ug/ml, Immunohistochemistry-Frozen 0.5-1ug/ml, Flow (Intracellular), CyTOF-ready
<b>Application Notes</b>	Use in Flow Cytometry reported in scientific literature (PMID:34276989).

## Images

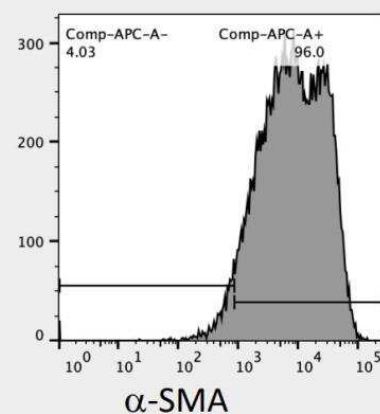
Western blot shows lysates of human heart tissue and iBJ6 human induced pluripotent stem cell line undifferentiated or cardiac differentiated. PVDF membrane was probed with 0.25 ug/mL of Mouse Anti-alpha-Smooth Muscle Actin Monoclonal Antibody (Catalog # NBP2-33006) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). The observed molecular weight was detected for alpha Smooth Muscle Actin at approximately 40 kDa (as indicated). This experiment was conducted under reducing conditions. Image using the standard format of this product.



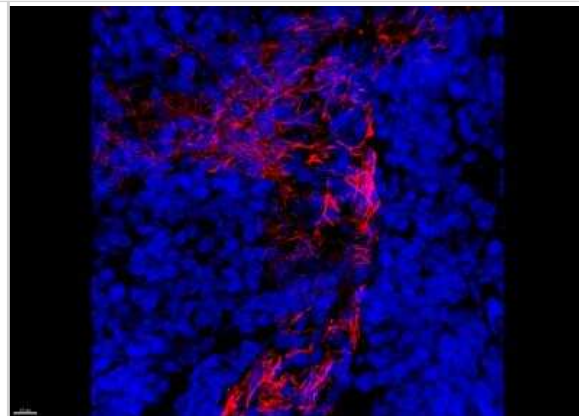
M2 macrophage-related protein expression and the co-location of M2-macrophages and GC-MSCs within tumor tissues. Representative immunofluorescence images of the co-location of GC-MSCs (alpha-Smooth Muscle Actin; green) and M2-macrophages (CD204; red) in gastric cancer tissues detected by confocal microscopy. scale bar, 100 um. \*\*P < 0.01 vs. gastric cancer tissue. T: tumor; N: non-cancerous tissues. Image collected and cropped by CiteAb from the following publication (<https://www.nature.com/articles/s41419-019-2131-y>), licensed under a CC-BY license. Image using the standard format of this product.



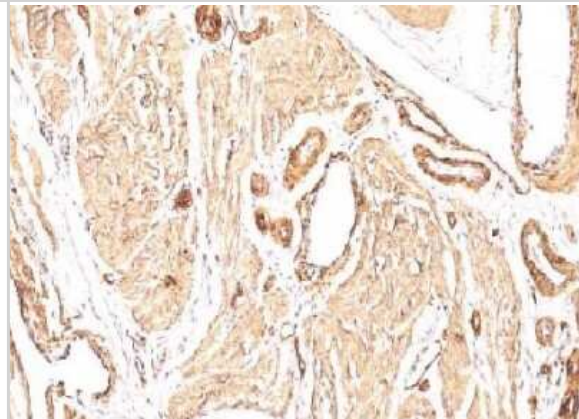
alpha-Smooth Muscle Actin expression in colorectal tumor cells. Using Allophycocyanin conjugated version of antibody (NBP2-34522APC). Image from verified customer review.



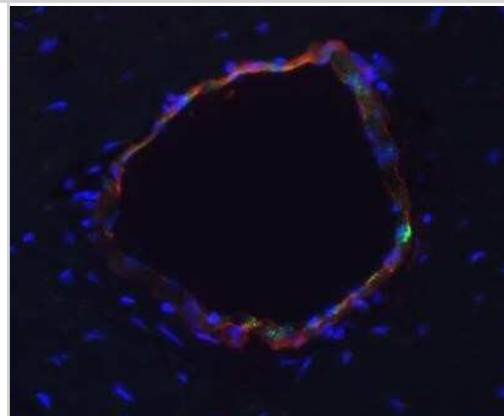
Human tonsil frozen tissue section stained for alpha-Smooth Muscle Actin (red) with the Janelia Fluor 549 conjugate of the Azide and BSA-Free version of alpha-Smooth Muscle Actin Antibody (1A4/asm-1), and counterstained with DAPI (blue). Image from verified customer review.



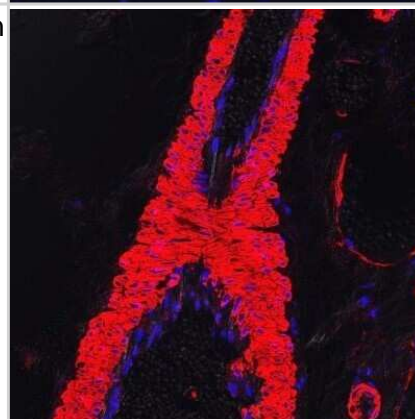
Paraffin-embedded human Leiomyosarcoma stained with the Azide and BSA-Free alpha-Smooth Muscle Actin Antibody (1A4/asm-1).



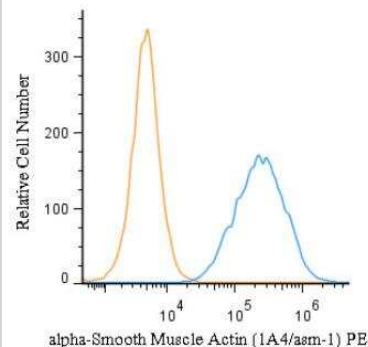
Canine brain/spinal cord section. Alpha-Smooth Muscle Actin Antibody (1A4/asm-1) staining in red. Endothelial cell marker in green. DAPI in blue. Alexa Fluor conjugated antibodies used for secondary antibodies. IHC image submitted by a verified customer review. Image using the standard format of this product.



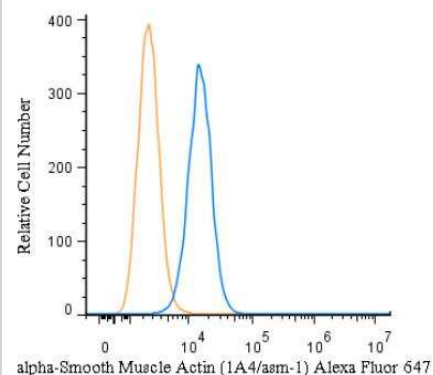
Feline tissue stained with alpha-Smooth Muscle Actin Antibody at dilution of 1:600. Vascular wall was stained. IHC image submitted by a verified customer review. Image using the standard format of this product.



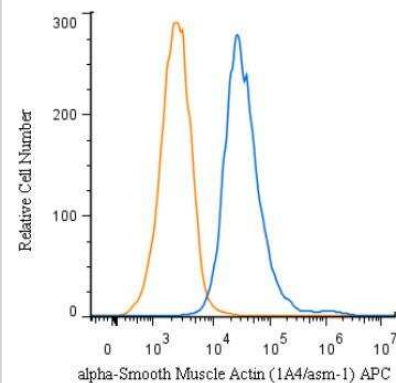
An intracellular stain was performed on HeLa cells with alpha-Smooth Muscle Actin Antibody (1A4/asm-1) NBP2-34522PE (blue) and a matched isotype control (orange). Cells were fixed with 4% PFA and then permeabilized with 0.1% saponin. Cells were incubated in an antibody dilution of 2.5 ug/mL for 30 minutes at room temperature. Both antibodies were conjugated to phycoerythrin.



An intracellular stain was performed on HeLa cells with alpha-Smooth Muscle Actin Antibody (1A4/asm-1) NBP2-34522AF647 (blue) and a matched isotype control (orange). Cells were fixed with 4% PFA and then permeabilized with 0.1% saponin. Cells were incubated in an antibody dilution of 2.5 ug/mL for 30 minutes at room temperature. Both antibodies were conjugated to Alexa Fluor 647.

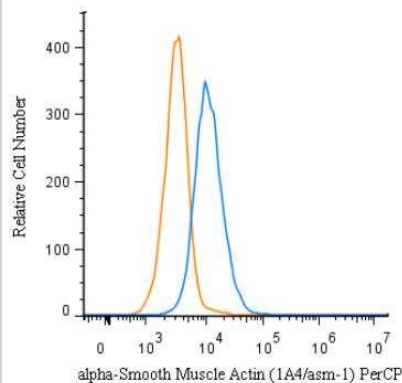


An intracellular stain was performed on HeLa cells with alpha-Smooth Muscle Actin Antibody (1A4/asm-1) NBP2-34522APC (blue) and a matched isotype control (orange). Cells were fixed with 4% PFA and then permeabilized with 0.1% saponin. Cells were incubated in an antibody dilution of 1 ug/mL for 30 minutes at room temperature. Both antibodies were conjugated to Allophycocyanin.



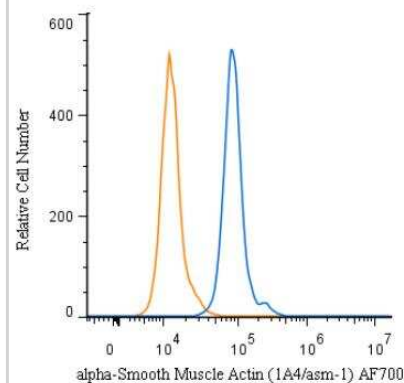
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An intracellular stain was performed on HeLa cells with alpha-Smooth Muscle Actin Antibody (1A4/asm-1) NBP2-34522PCP (blue) and a matched isotype control (orange). Cells were fixed with 4% PFA and then permeabilized with 0.1% saponin. Cells were incubated in an antibody dilution of 10 ug/mL for 30 minutes at room temperature. Both antibodies were conjugated to PerCP.



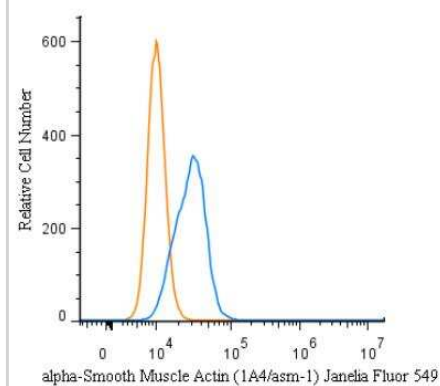
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An intracellular stain was performed on HeLa cells with alpha-Smooth Muscle Actin Antibody (1A4/asm-1) NBP2-34522AF700 (blue) and a matched isotype control (orange). Cells were fixed with 4% PFA and then permeabilized with 0.1% saponin. Cells were incubated in an antibody dilution of 10 ug/mL for 30 minutes at room temperature. Both antibodies were conjugated to Alexa Fluor 700.



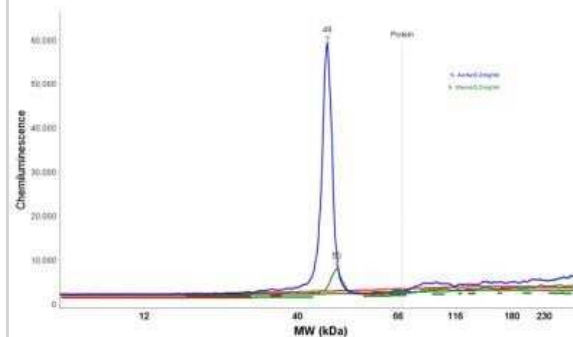
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An intracellular stain was performed on HeLa cells with alpha Smooth Muscle Actin (1A4/asm-1) Antibody NBP2-34522JF549 (blue) and a matched isotype control (orange). Cells were fixed with 4% PFA and then permeabilized with 0.1% saponin. Cells were incubated in an antibody dilution of 5 ug/mL for 30 minutes at room temperature. Both antibodies were conjugated to Janelia Fluor 549.



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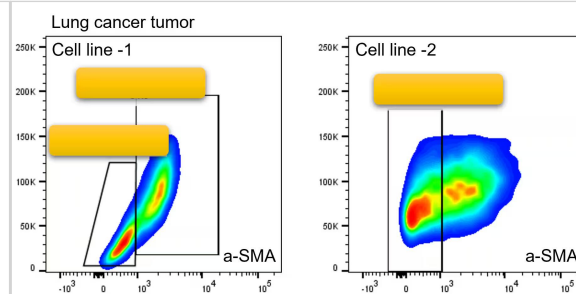
Electropherogram image of the corresponding Simple Western lane. alpha-Smooth Muscle Actin antibody was used at 10 ug/ml dilution of h. Aorta and h. Uterus lysates(s) respectively. Image using the standard format of this product.



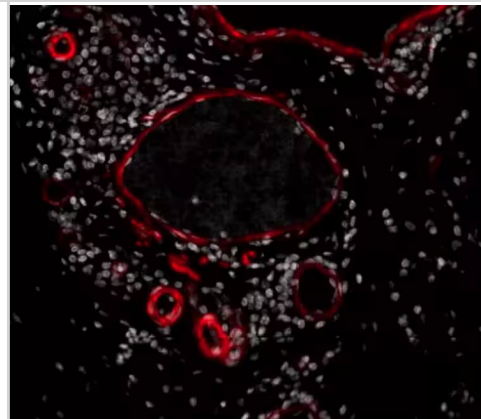
Simple Western lane view shows a specific band for an observed molecular weight at ~45 kDa for alpha-Smooth Muscle Actin in 0.2 mg/ml of h. Aorta lysate. This experiment was performed under reducing conditions using the 12-230 kDa separation system. Image using the standard format of this product.



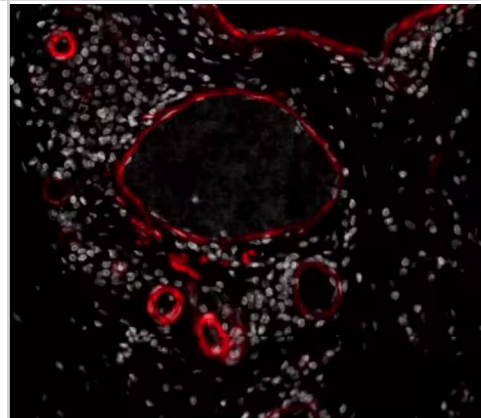
Flow Cytometry: alpha-Smooth Muscle Actin Antibody (1A4/asm-1) - BSA Free [NBP2-33006] - Analysis of alpha-Smooth Muscle Actin Antibody (1A4/asm-1) [Alexa Fluor® 647] (Catalog Number: NBP2-34522AF647) using two lung cancer cell lines to acquire the subcutaneous tumors. MMT status of macrophages was then analyzed. Image from a verified customer review.



Immunohistochemistry-Paraffin: alpha-Smooth Muscle Actin Antibody (1A4/asm-1) - Azide and BSA Free [NBP2-34522] - aSMA stained over night in human FFPE tonsil section ((Catalog # NBP2-33006AF750)). Heat mediated antigen retrieval at pH 9. 1:50 Dilution in 3% BSA, incubation over night at 4 °C. Image from a verified customer review.



Immunohistochemistry-Paraffin: alpha-Smooth Muscle Actin Antibody (1A4/asm-1) - Azide and BSA Free [NBP2-34522] - aSMA stained over night in human FFPE tonsil section ((Catalog # NBP2-33006AF750)). Heat mediated antigen retrieval at pH 9. 1:50 Dilution in 3% BSA, incubation over night at 4 °C. Image from a verified customer review.



## Publications

Yuan T, Xia Y, Pan S et al. STAT6 promoting oxalate crystal deposition-induced renal fibrosis by mediating macrophage-to-myofibroblast transition via inhibiting fatty acid oxidation *Inflammation research : official journal of the European Histamine Research Society ... [et al.]* 2023-12-01 [PMID: 37924395]

Xie J, Chen H, Hu K et al. CD248-targeted BBIR-T cell therapy against late-activated fibroblasts in cardiac repair after myocardial infarction *Research Square* 2023-11-21 (FLOW)

Dudgeon C, Casabianca A, Harris C et al. Netrin-1 feedforward mechanism promotes pancreatic cancer liver metastasis via hepatic stellate cell activation, retinoid, and ELF3 signaling *Cell reports* 2023-11-02 [PMID: 37922311] (FLOW, Mouse)

Lauterbach AL, Wallace RP, Alpar AT et al. Topically-applied collagen-binding serum albumin-fused interleukin-4 modulates wound microenvironment in non-healing wounds *NPJ Regenerative medicine* 2023-09-11 [PMID: 37696884] (FLOW, Mouse)

Medzikovic L, Aryan L, Ruffenach G et al. Myocardial fibrosis and calcification are attenuated by microRNA-129-5p targeting Asporin and Sox9 in cardiac fibroblasts *JCI insight* 2023-05-08 [PMID: 37154157] (ICC/IF, Mouse)

Sulaiman R, De P, Aske JC et al. Characterization and Clinical Relevance of Endometrial CAFs: Correlation between Post-Surgery Event and Resistance to Drugs *International journal of molecular sciences* 2023-03-29 [PMID: 37047422] (FLOW, Human)

Siewiera J, McIntyre TI, Cautivo KM et al. Circumvention of luteolysis reveals parturition pathways in mice dependent upon innate type 2 immunity *Immunity* 2023-01-24 [PMID: 36750100]

Virk HS Redox-sensitive TRP ion channels in the interaction between human lung myofibroblasts and oxidative stress *Thesis* 2022-01-01 (ICC/IF, Human)

Piera L, Szymanski J, Juszcak M et al. Histamine is involved in the regulation of collagen content in cultured heart myofibroblasts via H(2), H(3) and H(4) histamine receptors *Biomed Rep* 2021-08-01 [PMID: 34276989] (FLOW)

### Details:

Citation using the Azide and BSA Free format of this antibody.

Hirata Y, Aoki H, Shojima T et al. Activation of the AKT Pathway in the Ascending Aorta With Bicuspid Aortic Valve. *Circ J.* 2018-09-25 [PMID: 30089758] (ICC/IF, ICC/IF, Human)

Guzy RD, Li L, Smith C et al. Pulmonary fibrosis requires cell-autonomous mesenchymal fibroblast growth factor (FGF) signaling *J Biol Chem.* 2017-06-23 [PMID: 28487375] (FLOW, Mouse)

### Details:

Citation used the Alexa Fluor 647 format of this antibody.

Bloodworth NC, Clark CR, West JD et al. Bone Marrow-Derived Proangiogenic Cells Mediate Pulmonary Arteriole Stiffening via Serotonin 2B Receptor Dependent Mechanism. *Circ Res.* 2018-12-07 [PMID: 30566041] (IF/IHC, Mouse)

### Details:

Citation used the Alexa Fluor 647 format of this antibody.

More publications at <http://www.novusbio.com/NBP2-34522>





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### **Products Related to NBP2-34522-0.1mg**

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NBP2-33376H	Blue Marker Antibody (6F4-F6) [HRP]
HAF007	Goat anti-Mouse IgG Secondary Antibody [HRP]
NB7539	Goat anti-Mouse IgG (H+L) Secondary Antibody [HRP]
NBP1-96981-0.5mg	Mouse IgG2a Kappa Isotype Control (M2AK)

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### **Limitations**

This product is for research use only and is not approved for use in humans or in clinical diagnosis. Primary Antibodies are guaranteed for 1 year from date of receipt.

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