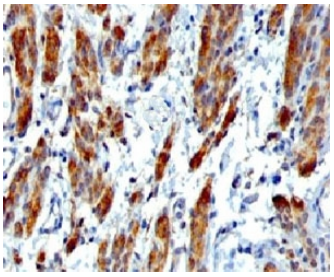
SMMHC Antibody SMM11-1 [clone SMM11-1] (V7120)

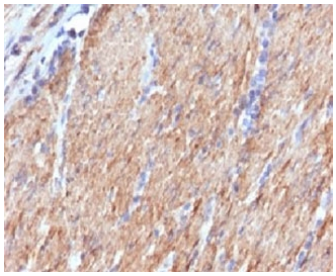
Catalog No.	Formulation	Size
V7120-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V7120-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V7120SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug
V7120IHC-7ML	Prediluted in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide; *For IHC use only*	7 ml

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1
Clone Name	SMM11-1
Purity	Protein G affinity chromatography
UniProt	P35749
Localization	Cytoplasmic
Applications	Immunohistochemistry (FFPE): 1-2ug/ml for 30 min at RT Prediluted IHC only format: incubate for 30 min at RT (1)
Limitations	This SMMHC Antibody SMM11-1 is available for research use only.



IHC testing of FFPE human Leiomyosarcoma with SMMHC Antibody SMM11-1. FFPE testing requires sections to be boiled in pH 9 10mM Tris with 1mM EDTA for 10-20 minutes, followed by cooling at RT for 20 minutes, prior to staining.



IHC testing of FFPE human colon carcinoma with SMMHC Antibody SMM11-1. FFPE testing requires sections to be boiled in pH 9 10mM Tris with 1mM EDTA for 10-20 minutes, followed by cooling at RT for 20 minutes, prior to staining.

Description

SMMHC Antibody SMM11-1 recognizes Smooth Muscle Myosin Heavy Chain (SMMHC), a major contractile protein encoded by the MYH11 gene and one of the most specific markers of differentiated smooth muscle cells. Mouse monoclonal clone SMM11-1 targets this high molecular weight myosin isoform, which forms thick filaments that interact with actin to generate force during smooth muscle contraction. SMMHC is abundantly expressed in vascular, gastrointestinal, respiratory, and genitourinary smooth muscle tissues, where it plays essential roles in regulating vascular tone, peristalsis, and organ function. Because of its highly restricted expression pattern, SMMHC is widely used as a marker of mature smooth muscle differentiation in both research and diagnostic pathology.

SMMHC belongs to the conventional myosin family and functions through ATP dependent interactions with actin filaments to produce contractile force. Alternative splicing generates multiple isoforms that contribute to tissue specific differences in contractile properties. SMMHC works in concert with alpha smooth muscle actin, calponin, and desmin to maintain the contractile phenotype and structural integrity of smooth muscle cells. Expression of MYH11 is regulated by myocardin and serum response factor dependent pathways that coordinate smooth muscle differentiation and phenotypic plasticity.

Alterations in MYH11 expression and function have been linked to vascular disease, aneurysm formation, and smooth muscle dysfunction. Mutations in MYH11 are associated with familial thoracic aortic aneurysms and patent ductus arteriosus. In surgical pathology, SMMHC serves as a highly specific marker for smooth muscle tumors and is frequently used to distinguish leiomyosarcomas and smooth muscle proliferations from other spindle cell neoplasms. SMMHC is also valuable in breast and prostate pathology, where myoepithelial cell staining assists in differentiating invasive from noninvasive lesions.

Beyond smooth muscle pathology, chromosomal rearrangements involving MYH11 contribute to leukemogenesis through formation of CBFB-MYH11 fusion proteins in acute myeloid leukemia. Consequently, SMMHC has significance in both solid tumors and hematologic malignancies. Detection of SMMHC using clone SMM11-1 provides a valuable tool for studies of vascular biology, gastrointestinal physiology, contractility, and developmental biology.

SMMHC Antibody is useful for investigations of smooth muscle differentiation, vascular remodeling, and tumor pathology. Detection of endogenous SMMHC provides a reliable marker for studies of contractile function, tissue architecture, and diseases associated with altered smooth muscle biology.

Visit our SMMHC Antibody page to discover additional antibodies against this Smooth Muscle Differentiation Marker, including reagents for studies of vascular biology, contractility, and smooth muscle pathology.

Application Notes

Titering of the SMMHC Antibody SMM11-1 may be required for optimal performance.

1. The prediluted format is supplied in a dropper bottle and is optimized for use in IHC. After epitope retrieval step (if required), drip mAb solution onto the tissue section and incubate at RT for 30 min.

Immunogen

Human recombinant protein was used as the immunogen for the SMMHC antibody.

Storage

Store the SMMHC antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).

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