PRODUCT INFORMATION

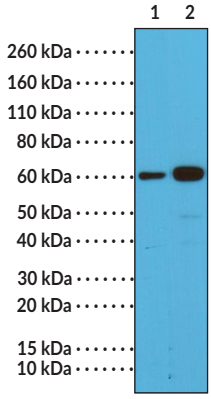
SMAD4 (C-Term) Rabbit Monoclonal Antibody (Clone RM277)

Item No. 32227

Overview and Properties

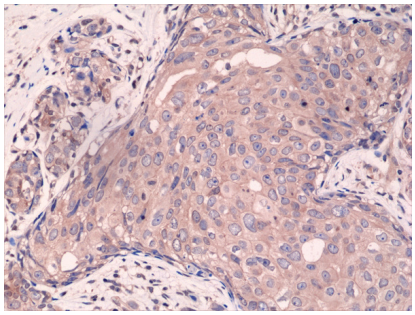
Contents:	This vial contains 100 µl of protein A-affinity purified monoclonal antibody.
Synonyms:	Deleted in Pancreatic Carcinoma Locus 4, DPC4, MADH4, Mothers Against Decapentalplegic Homolog 4
Immunogen:	Peptide from the C-terminal region of human SMAD4
Cross Reactivity:	(+) SMAD4
Species Reactivity:	(+) Human
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide
Clone:	RM277
Host:	Rabbit
Isotype:	IgG
Applications:	Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution is 1:1,000-1:2,000 and 1:500-1:1,000, respectively. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images

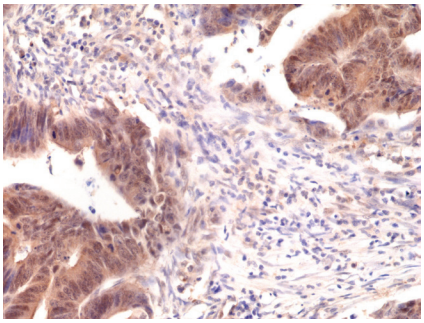


Lane 1: Jurkat cell lysates
Lane 2: IMR32 cell lysates

WB of Jurkat and IMR32 cell lysates using SMAD4 (C-Term) Rabbit Monoclonal Antibody (Clone RM277) at a dilution of 1:500.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human breast cancer tissue using SMAD4 (C-Term) Rabbit Monoclonal Antibody (Clone RM277) at a 1:2,000 dilution.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human colon cancer tissue using SMAD4 (C-Term) Rabbit Monoclonal Antibody (Clone RM277) at a 1:5,000 dilution.

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Description

SMAD4, also known as deleted in pancreatic carcinoma locus 4 (DPC4), is a tumor suppressor and a signal transduction protein that functions as a central mediator of the TGF-β and bone morphogenic protein (BMP) signaling pathways.[1,2] It is comprised of an N-terminal MH1 domain that binds DNA, a linker region containing a C-terminal SMAD activation domain essential to SMAD4 transcriptional activity, and a C-terminal MH2 domain that interacts with the MH1 domain of other SMAD proteins to facilitate homo- and heterodimerization.[2] SMAD4 is ubiquitously expressed and localized to both the nucleus and cytosol.[1] Upon TGF-β or BMP receptor activation, SMAD4 forms complexes with phosphorylated SMAD2 and SMAD3 or SMAD1, SMAD5, and SMAD8, respectively, which are translocated to the nucleus to induce cell cycle arrest and apoptosis.[2] Homozygous deletion of, or intragenic inactivation mutations in, *SMAD4* have been found in pancreatic and colorectal cancers. Heterozygous mutations in *SMAD4* have been found in approximately 20% of patients with juvenile polyposis syndrome and are positively correlated with manifestation of hereditary hemorrhagic telangiectasia.[3] Cayman's SMAD4 (C-Term) Rabbit Monoclonal Antibody (Clone RM277) can be used for immunohistochemistry (IHC) and Western blot (WB) applications.

References

1. McCarthy, A.J. and Chetty, R. Smad4/DPC4. *J. Clin. Pathol.* **71(8)**, 661-664 (2018).
2. Zhao, M., Mishra, L., and Deng, C.-X. The role of TGF-β/SMAD4 signaling in cancer. *Int. J. Biol. Sci.* **14(2)**, 111-123 (2018).
3. Andrabi, S., Bekheirnia, M.R., Robbins-Furman, P., *et al.* SMAD4 mutation segregating in a family with juvenile polyposis, aortopathy, and mitral valve dysfunction. *Am. J. Med. Genet. A.* **155A(5)**, 1165-1169 (2011).

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