abcam

ab187149

Anti-SMYD3 antibody [EPR11107(2)]

Recombinant | RabMAb | KO Validated | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR11107(2)
Purification technique	Affinity purification Protein A
Concentration	1.61 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse
Dilution info	1/100
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Species	Human
Dilution info	1/100
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

IP

Tested

Species	Human
Dilution info	1/40 - 1/60
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000 - 1/20000
Notes	-

Species	Rat
Dilution info	1/1000 - 1/20000
Notes	-

Species	Human
Dilution info	1/1000 - 1/20000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/250
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/30
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information SMYD3

Function	Histone methyltransferase. Specifically methylates 'Lys-4' of histone H3, inducing di- and tri-methylation, but not monomethylation (PubMed:15235609, PubMed:22419068). Also methylates 'Lys-5' of histone H4 (PubMed:22419068). Plays an important role in transcriptional activation as a member of an RNA polymerase complex (PubMed:15235609). Binds DNA containing 5'-CCCTCC-3' or 5'-GAGGGG-3' sequences (PubMed:15235609).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	SMYD3 short for SET and MYND domain containing 3 is a member of the protein lysine methyltransferase family. It mainly functions as a histone methyltransferase adding methyl groups to lysine 4 on histone H3 (H3K4) and lysine 5 on histone H4 (H4K5) influencing chromatin structure and gene expression. SMYD3 has a

	molecular mass of approximately 56 kDa. It is widely expressed in multiple tissues but levels are higher in skeletal muscle and the heart. This broad expression indicates its potential role in various cellular functions.
Biological function summary	This methyltransferase regulates transcriptional activation by methylating histones. It acts as part of transcriptional coactivator complexes interacting with RNA polymerase II. SMYD3 modulates the expression of genes involved in cell proliferation and cancer progression. Additionally it interacts with proteins like Heat Shock Protein 90 (HSP90) and promotes the stabilization of substrate proteins. Its influence extends to non-histone proteins which suggests a wider impact on cellular signaling and structure.
Pathways	SMYD3 is involved in the MAPK (Mitogen-Activated Protein Kinase) signaling pathway an important regulator of cell differentiation proliferation and survival. It interacts with key proteins in this pathway such as ERK2 (Extracellular signal-regulated kinase 2) influencing cellular outcomes. SMYD3 also plays a role in the Wnt signaling pathway which is important for development and oncogenesis. This interaction with signaling pathways underlines its significant regulatory functions within the cell.
Associated diseases and disorders	SMYD3 is strongly associated with cancer. Its overexpression contributes to tumorigenesis and metastasis particularly in colorectal and liver cancers. In cancer SMYD3 interacts with proteins like AKT1 promoting cancer cell survival and growth. Additionally SMYD3 has been linked to congenital heart diseases through its role in cardiac development. It interacts with cardiac transcription factors further connecting its function to heart malformations.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

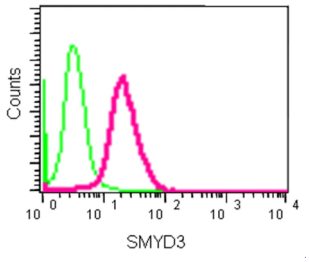
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

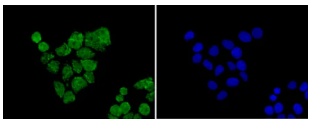
8 product images



Flow Cytometry (Intracellular) - Anti-SMYD3 antibody [EPR11107(2)] (ab187149)

SMYD3 Flow Cytometry (Intracellular) staining using rabbit Anti-SMYD3 antibody

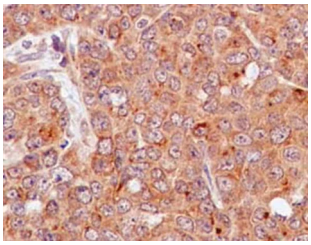
Intracellular flow cytometric analysis of 2%paraformaldehyde-fixed HeLa (human epithelial cell line from cervix adenocarcinoma) cells, labeling SMYD3 with ab187149 at 1/30 dilution. Secondary antibody wasGoat anti rabbit IgG (FITC) at 1/150 dilution. Isotype control was a Rabbit monoclonal IgG.



Immunocytochemistry/ Immunofluorescence - Anti-SMYD3 antibody [EPR11107(2)] (ab187149)

SMYD3 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-SMYD3 antibody

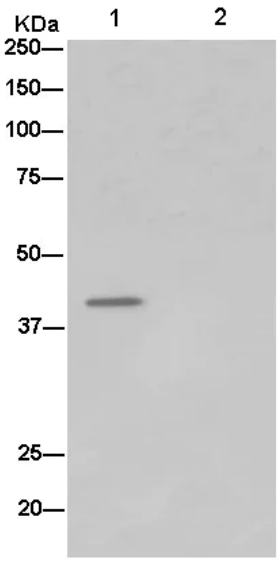
Immunofluorescent analysis of 4% paraformaldehyde-fixed MCF7 (human breast adenocarcinoma cell line) cells, labeling SMYD3 with ab187149 at 1/250 dilution (left image; green); secondary antibody was Goat anti rabbit IgG Alexa Fluor®488, and counterstained with Dapi (right image; blue).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SMYD3 antibody [EPR11107(2)] (ab187149)

SMYD3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SMYD3 antibody

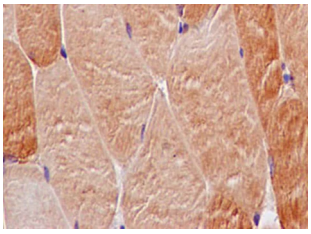
Immunohistochemical analysis of paraffin-embedded human colonic carcinoma tissue, labeling SMYD3 with ab187149 at 1/100 dilution. Counterstained with Hematoxylin.
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Immunoprecipitation - Anti-SMYD3 antibody [EPR11107(2)] (ab187149)

Immunoprecipitation analysis of HeLa (human epithelial cell line from cervix adenocarcinoma) cell lysate labeling SMYD3 using ab187149 at 1/50 dilution (Lane 1). A Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/1500 was used as secondary antibody. Lane 2: PBS instead of HeLa lysate.
All lanes:
Immunoprecipitation - Anti-SMYD3 antibody [EPR11107(2)] (ab187149)

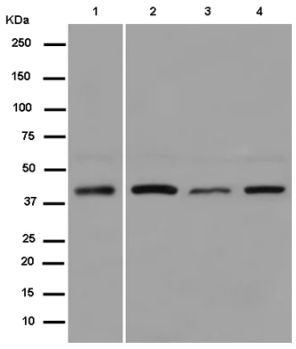
Predicted band size: 49 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SMYD3 antibody [EPR11107(2)] (ab187149)

SMYD3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SMYD3 antibody

Immunohistochemical analysis of paraffin-embedded mouse skeletal muscle tissue, labeling SMYD3 with ab187149 at 1/100 dilution. Counterstained with Hematoxylin.
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Western blot - Anti-SMYD3 antibody [EPR11107(2)] (ab187149)

SMYD3 Western blot staining using rabbit Anti-SMYD3 antibody

Blocking and dilution buffer: 5% NFDM/TBST
All lanes:
Western blot - Anti-SMYD3 antibody [EPR11107(2)] (ab187149) at 1/20000 dilution

Lane 1:
MCF7 (human breast adenocarcinoma cell line) cell lysate at 20 µg

Lane 2:
HeLa (human epithelial cell line from cervix adenocarcinoma) cell lysate at 20 µg

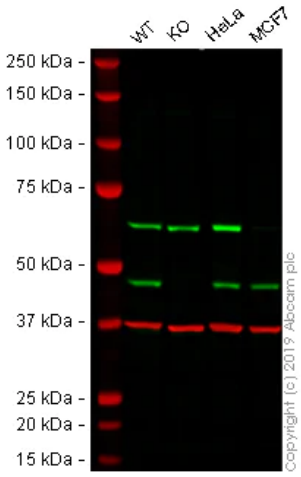
Lane 3:
HEK-293 (human epithelial cell line from embryonic kidney) cell lysate at 20 µg

Lane 4:
T47-D (human ductal breast epithelial tumor cell line) cell lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

Predicted band size: 49 kDa



Western blot - Anti-SMYD3 antibody [EPR11107(2)] (ab187149)

SMYD3 Western blot staining using rabbit Anti-SMYD3 antibody

Lanes 1 - 4: Merged signal (red and green). Green - ab187149 observed at 49 kDa. Red - loading control, ab8245 (Mouse anti-GAPDH antibody [6C5]) observed at 37kDa.
ab187149 was shown to react with SMYD3 in HAP1 wild-type cells in Western blot. Loss of signal was observed when SMYD3 knockout sample was used. HAP1 wild-type and SMYD3 knockout whole cell lysates were subjected to SDS-PAGE. Membranes were blocked in 3% Milk in TBS-T (0.1% Tween®) before incubation with ab187149 and ab8245 (Mouse anti-GAPDH antibody [6C5]) overnight at 4°C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-SMYD3 antibody [EPR11107(2)] (ab187149) at 1/1000 dilution

Lane 1:
Wild-type HAP1 whole cell lysate at 20 µg

Lane 2:
SMYD3 knockout HAP1 whole cell lysate at 20 µg

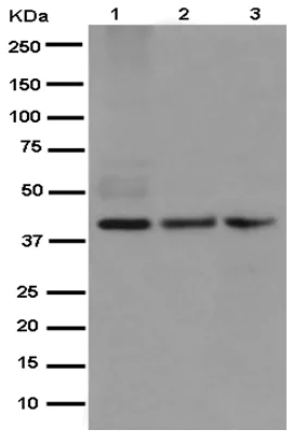
Lane 3:
HeLa whole cell lysate at 20 µg

Lane 4:
MCF7 whole cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 49 kDa

Observed band size: 49 kDa



Western blot - Anti-SMYD3 antibody [EPR11107(2)] (ab187149)

Blocking and dilution buffer: 5% NFDM/TBST
All lanes:
Western blot - Anti-SMYD3 antibody [EPR11107(2)] (ab187149) at 1/5000 dilution

Lane 1:
Mouse brain tissue lysate at 10 µg

Lane 2:
Rat spleen tissue lysate at 10 µg

Lane 3:
NIH/3T3 cell lysate at 10 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

Predicted band size: 49 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.