abcam

ab300517

Anti-KMT5A / SETD8 / Pr-SET7 antibody [EPR24381-24]

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	EPR24381-24
Purification technique	Affinity purification Protein A
Concentration	0.509 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ChIP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/50
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Mouse, Human, Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Rat, Mouse, Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Rat, Mouse
Dilution info	-
Notes	-

Target data

See full target information KMT5A

Function

Protein-lysine N-methyltransferase that monomethylates both histones and non-histone proteins (PubMed:12086618, PubMed:12121615, PubMed:15964846, PubMed:17707234, PubMed:27338793). Specifically monomethylates 'Lys-20' of histone H4 (H4K20me1) (PubMed:12086618, PubMed:12121615, PubMed:15200950, PubMed:15933069, PubMed:15933070, PubMed:15964846, PubMed:16517599, PubMed:27338793). H4K20me1 is enriched during mitosis and represents a specific tag for epigenetic transcriptional repression (PubMed:12086618, PubMed:12121615, PubMed:15200950, PubMed:15933069, PubMed:15933070, PubMed:15964846, PubMed:16517599). Mainly functions in euchromatin regions, thereby playing a central role in the silencing of euchromatic genes (PubMed:12086618, PubMed:12121615, PubMed:15200950, PubMed:15933069, PubMed:15933070, PubMed:15964846, PubMed:16517599). Required for cell proliferation, probably by contributing to the maintenance of proper higher-order structure of DNA during mitosis (PubMed:12086618, PubMed:12121615, PubMed:15200950, PubMed:15933069, PubMed:15933070, PubMed:15964846, PubMed:16517599). Involved in chromosome condensation and proper cytokinesis (PubMed:12086618, PubMed:12121615, PubMed:15200950, PubMed:15933069, PubMed:15933070, PubMed:15964846, PubMed:16517599). Nucleosomes are preferred as substrate compared to free histones

(PubMed:12086618, PubMed:12121615, PubMed:15200950, PubMed:15933069, PubMed:15933070, PubMed:15964846, PubMed:16517599). Mediates monomethylation of p53/TP53 at 'Lys-382', leading to repress p53/TP53-target genes (PubMed:17707234). Plays a negative role in TGF-beta response regulation and a positive role in cell migration (PubMed:23478445).

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	KMT5A also known as SETD8 or Pr-SET7 is a histone methyltransferase enzyme with a notable role in regulating chromatin dynamics. It specifically catalyzes the monomethylation of histone H4 at lysine 20 (H4K20me1) a modification linked to chromatin compaction and DNA damage response. The molecular mass of KMT5A is approximately 47 kDa. Expression of KMT5A is observed in various tissues

	including the liver kidney and to some extent in embryonic stem cells indicating its functionality across different stages of development and cell types.
Biological function summary	KMT5A's activity influences several essential cellular processes such as cell cycle progression and DNA repair. As part of a larger chromatin-modulating framework it often functions alongside other chromatin-associated proteins including those from the Polycomb group. It plays a significant role in maintaining genomic stability by marking specific regions of chromatin for certain functions thereby affecting transcription regulation and cellular growth.
Pathways	KMT5A integrates into critical biological mechanisms like the DNA damage response and cell cycle regulation. It links closely with pathways involving p53 and cyclin-dependent kinase (CDK) inhibitors. KMT5A's histone modification activity influences proteins such as p21 and p16 within the DNA damage signaling network. Its regulatory role here is essential as it facilitates an environment conducive to the DNA repair machinery following genotoxic stress.
Associated diseases and disorders	KMT5A connects to various pathological states notably cancer and neurodegenerative disorders. Misregulation of KMT5A activity is associated with tumorigenesis where altered levels of H4K20me1 can lead to abnormal cell proliferation. Additionally KMT5A interacts through pathways tied to protein like TP53 influencing cellular responses to stressors typically seen in oncogenesis. Similarly aberrant regulation has implications in cognitive impairments potentially through dysregulated methylation patterns affecting neuronal cell cycle re-entry.

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

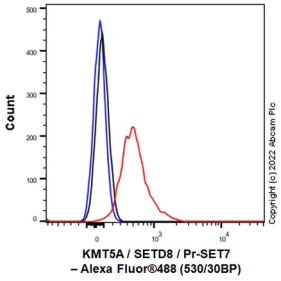
We do not recommend this combination. It is not covered by our product promise.

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:

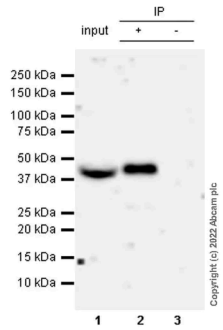
4 product images



Flow Cytometry (Intracellular) - Anti-KMT5A / SETD8 / Pr-SET7 antibody [EPR24381-24] (ab300517)

KMT5A / SETD8 / Pr-SET7 Flow Cytometry (Intracellular) staining of U-2 OS (human bone osteosarcoma epithelial cell) using rabbit Anti-KMT5A / SETD8 / Pr-SET7 antibody

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized U-2 OS (human bone osteosarcoma epithelial cell) cells labelling KMT5A / SETD8 / Pr-SET7 with ab300517 at 1/50 dilution (1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody.



Immunoprecipitation - Anti-KMT5A / SETD8 / Pr-SET7 antibody [EPR24381-24] (ab300517)

KMT5A / SETD8 / Pr-SET7 was immunoprecipitated from 0.35 mg U-2 OS (human bone osteosarcoma epithelial cell) whole cell lysate 10 ug with ab300517 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab300517 at 1/1000 dilution. VeriBlot for IP secondary antibody (HRP)(ab131366) was used at 1/1000 dilution. Lane 1: U-2 OS (human bone osteosarcoma epithelial cell) whole cell lysate 10 ug Lane 2: ab300517 IP in U-2 OS (human bone osteosarcoma epithelial cell) whole cell lysate Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab300517 in U-2 OS whole cell lysate. Blocking and dilution buffer and concentration: 5% NFDM/TBST. Exposure time: 3 minutes
Lane 1:
Immunoprecipitation - Anti-KMT5A / SETD8 / Pr-SET7 antibody [EPR24381-24] (ab300517) at 1/30 dilution

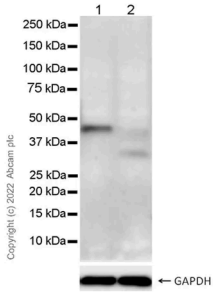
Lane 2:
Immunoprecipitation - Anti-KMT5A / SETD8 / Pr-SET7 antibody [EPR24381-24] (ab300517) at 1/1000 dilution

All lanes:
U-2 OS (human bone osteosarcoma epithelial cell) whole cell lysate at 10 µg

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/1000 dilution

Exposure time: 3min



Western blot - Anti-KMT5A / SETD8 / Pr-SET7 antibody [EPR24381-24] (ab300517)

KMT5A / SETD8 / Pr-SET7 Western blot staining using rabbit Anti-KMT5A / SETD8 / Pr-SET7 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
In Western blot, ab300517 was shown to bind specifically to N-lysine methyltransferase KMT5A. A band was observed at 43 kDa in wild-type HEK293 cell lysates whereas no signal observed at this size in N-lysine methyltransferase KMT5A knockout cell line ab261858 (knockout cell lysate ab261667).

All lanes:
Western blot - Anti-KMT5A / SETD8 / Pr-SET7 antibody [EPR24381-24] (ab300517) at 1/1000 dilution

Lane 1:
Wild-type HEK-293 (human embryonic kidney epithelial cell) whole cell lysate at 20 µg

Lane 2:
KMT5A knockout HEK-293 whole cell lysate at 20 µg

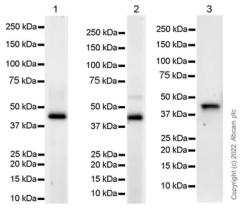
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Performed under reducing conditions.

Observed band size: 43 kDa

Exposure time: 147s



Western blot - Anti-KMT5A / SETD8 / Pr-SET7 antibody [EPR24381-24] (ab300517)

KMT5A / SETD8 / Pr-SET7 Western blot staining using rabbit Anti-KMT5A / SETD8 / Pr-SET7 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
Exposure time: Lanes 1-2: 70 seconds; Lane 3: 48 seconds

Lanes 1/2 were developed using a high sensitivity ECL substrate.

Lysates were freshly made and used immediately to minimize protein degradation.

All lanes:
Western blot - Anti-KMT5A / SETD8 / Pr-SET7 antibody [EPR24381-24] (ab300517) at 1/1000 dilution

Lane 1:
HCT116 (human colorectal carcinoma epithelial cell), whole cell lysate at 10 µg

Lane 2:
SH-SY5Y (human neuroblastoma epithelial cell), whole cell lysate at 10 µg

Lane 3:
U-2 OS (human bone osteosarcoma epithelial cell), whole cell lysate at 10 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Performed under non-reducing conditions.

Observed band size: 43 kDa

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