abcam

ab259940

Anti-WHSC1/NSD2 antibody [EPR23777-107]

Recombinant | RabMAb | 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	EPR23777-107
Purification technique	Affinity purification Protein A
Concentration	0.517 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Mouse
Dilution info	1/250
Notes	-

Species	Human

Dilution info	1/250
Notes	-

Not recommended

Species	Rat
Dilution info	-
Notes	-

IP

Not recommended

Species	Mouse, Human, Rat
Dilution info	-
Notes	-

ChIP

Not recommended

Species	Mouse, Human, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Mouse, Human, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Species	Human
Dilution info	1/500
Notes	-

Not recommended

Species	Rat
Dilution info	-
Notes	-

Target data

See full target information NSD2

Function	Histone methyltransferase which specifically dimethylates nucleosomal histone H3 at 'Lys-36' (H3K36me2) (PubMed:19808676, PubMed:22099308, PubMed:27571355, PubMed:29728617, PubMed:33941880). Also monomethylates nucleosomal histone H3 at 'Lys-36' (H3K36me) in vitro (PubMed:22099308). Does not trimethylate nucleosomal histone H3 at 'Lys-36' (H3K36me3) (PubMed:22099308). However, specifically trimethylates histone H3 at 'Lys-36' (H3K36me3) at euchromatic regions in embryonic stem (ES) cells (By similarity). By methylating histone H3 at 'Lys-36', involved in the regulation of gene transcription during various biological processes (PubMed:16115125, PubMed:22099308, PubMed:29728617). In ES cells, associates with developmental transcription factors such as SALL1 and represses inappropriate gene transcription mediated by histone deacetylation (By similarity). During heart development, associates with transcription factor NKX2-5 to repress transcription of NKX2-5 target genes (By similarity). Plays an essential role in adipogenesis, by regulating expression of genes involved in pre-adipocyte differentiation (PubMed:29728617). During T-cell receptor (TCR) and CD28-mediated T-cell activation, promotes the transcription of transcription factor BCL6 which is required for follicular helper T (Tfh) cell differentiation (By similarity). During B-cell development, required for the generation of the B1 lineage (By similarity). During B2 cell activation, may contribute to the control of isotype class switch recombination (CRS), splenic germinal center formation, and the humoral immune response (By similarity). Plays a role in class switch recombination of the immunoglobulin heavy chain (IgH) locus during B-cell activation (By similarity). By regulating the methylation of histone H3 at 'Lys-36' and histone H4 at 'Lys-20' at the IgH locus, involved in TP53BP1 recruitment to the IgH switch region and promotes the transcription of IgA (By similarity). Isoform 1. Histone methyltransferase which specifically dimethylates nucleosomal histone H3 at 'Lys-36' (H3K36me2). Isoform 4. Histone methyltransferase which specifically dimethylates nucleosomal histone H3 at 'Lys-36' (H3K36me2) (PubMed:22099308). Methylation of histone H3 at 'Lys-27' is controversial (PubMed:18172012, PubMed:22099308). Mono-, di- or tri-methylates histone H3 at 'Lys-27' (H3K27me, H3K27me2 and H3K27me3) (PubMed:18172012). Does not methylate histone H3 at 'Lys-27' (PubMed:22099308). May act as a transcription regulator that binds DNA and suppresses IL5 transcription through HDAC recruitment (PubMed:11152655, PubMed:18172012).

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	WHSC1 also known as NSD2 is a histone methyltransferase enzyme involved in the methylation of lysine 36 on histone H3. This enzyme facilitates the addition of a methyl group which affects chromatin structure and gene expression. NSD2 is also called WHSC1L1 or Wolf-Hirschhorn syndrome candidate 1-like 1. It has a molecular weight around 153 kDa. Researchers observe the expression of WHSC1/NSD2 predominantly in the nucleus but it is present in various tissues including lymphoid organs and certain types of cancer cells.
Biological function summary	WHSC1/NSD2 functions as an epigenetic regulator modifying histones to modulate transcriptional activity. It exists as part of a larger protein complex that includes several chromatin-associated proteins. Its role in histone methylation influences gene expression impacting cell differentiation survival and proliferation. Through controlling gene transcription WHSC1/NSD2 plays a significant role in development and cellular responses to environmental signals.
Pathways	WHSC1/NSD2 participates in key biological processes such as the cell cycle and DNA damage response pathways. It influences histone modification pathways by interacting with other proteins like SETD2 and H3K36me3 which are important for maintaining genomic integrity. In the DNA damage response NSD2 works together with proteins such as ATM coordinating repair mechanisms and cell cycle progression.
Associated diseases and disorders	Alterations in WHSC1/NSD2 expression or function associate with multiple myeloma and Wolf-Hirschhorn syndrome. In multiple myeloma overexpression or mutations of WHSC1/NSD2 lead to altered gene expression profiles and promote cancer cell proliferation. Within this context NSD2 often interacts with MMSET and FGFR3 proteins contributing to oncogenic transformation. Additionally mutations in WHSC1/NSD2 link to Wolf-Hirschhorn syndrome a genetic condition characterized by growth delay and intellectual disability.

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.

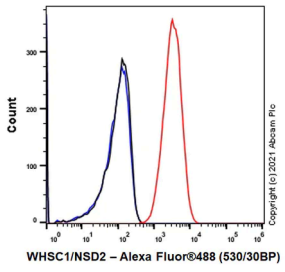
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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

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Terms & Conditions.

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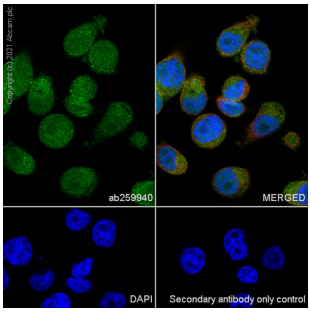
7 product images



Flow Cytometry (Intracellular) - Anti-WHSC1/NSD2 antibody [EPR23777-107] (ab259940)

WHSC1/NSD2 Flow Cytometry (Intracellular) staining using rabbit Anti-WHSC1/NSD2 antibody

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized PC-3 (human prostate adenocarcinoma epithelial cell) cells labelling WHSC1/NSD2 with ab259940 at 1/500 dilution (0.1ug)(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 F(ab')2 Anti-Rabbit IgG (DyLight® 488, ab98507) at 1/500 dilution was used as the secondary antibody.

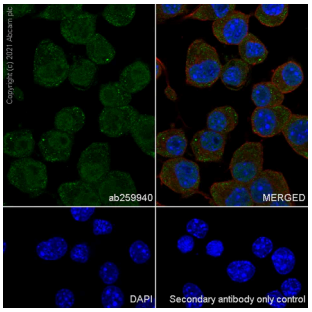


Immunocytochemistry/ Immunofluorescence - Anti-WHSC1/NSD2 antibody [EPR23777-107] (ab259940)

WHSC1/NSD2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-WHSC1/NSD2 antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized PC-3 cells labelling WHSC1/NSD2 with ab259940 at 1/250 (2.068 ug/ml) dilution, followed by ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) antibody at 1/1000 2ug/ml dilution (Green). Confocal

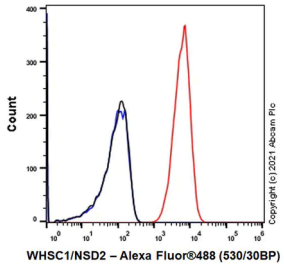
image showing nuclear and cytoplasmic staining in PC-3 cell line is observed. ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 2.5ug/ml dilution (Red). The Nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1/1000 2ug/ml dilution.



Immunocytochemistry/ Immunofluorescence - Anti-WHSC1/NSD2 antibody [EPR23777-107] (ab259940)

WHSC1/NSD2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-WHSC1/NSD2 antibody

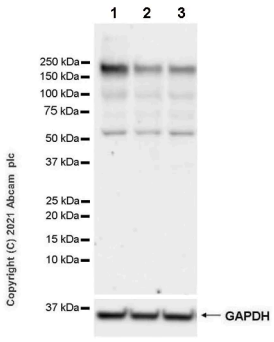
Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized Neuro-2a cells labelling WHSC1/NSD2 with ab259940 at 1/250 (2.068 ug/ml) dilution, followed by ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) antibody at 1/1000 2ug/ml dilution (Green). Confocal image showing nuclear and cytoplasmic staining in Neuro-2a cell line. is observed. ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 2.5ug/ml dilution (Red). The Nuclear counterstain was DAPI (Blue).
Secondary antibody only control: Secondary antibody is ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1/1000 2ug/ml dilution.



Flow Cytometry (Intracellular) - Anti-WHSC1/NSD2 antibody [EPR23777-107] (ab259940)

WHSC1/NSD2 Flow Cytometry (Intracellular) staining using rabbit Anti-WHSC1/NSD2 antibody

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized Neuro-2a (Mouse neuroblastoma neuroblast) cells labelling WHSC1/NSD2 with ab259940 at 1/500 dilution (0.1ug)(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 F(ab')2 Anti-Rabbit IgG (DyLight® 488, ab98507) at 1/500 dilution was used as the secondary antibody.



Western blot - Anti-WHSC1/NSD2 antibody [EPR23777-107] (ab259940)

WHSC1/NSD2 Western blot staining using rabbit Anti-WHSC1/NSD2 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST
Exposure time: 3 minutes

All lanes:
Western blot - Anti-WHSC1/NSD2 antibody [EPR23777-107] (ab259940) at 1/1000 dilution

Lane 1:
HeLa (human cervix adenocarcinoma epithelial cell) transfected with scrambled siRNA control whole cell lysate at 20 µg

Lane 2:
Hela transfected with WHSC1/NSD2 siRNA 1 whole cell lysate at 20 µg

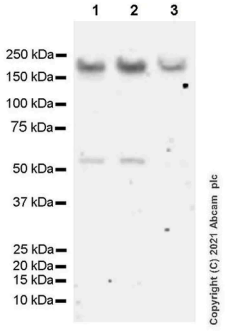
Lane 3:
Hela transfected with WHSC1/NSD2 siRNA 2 whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 152 kDa

Observed band size: 152 kDa



Western blot - Anti-WHSC1/NSD2 antibody [EPR23777-107] (ab259940)

WHSC1/NSD2 Western blot staining using rabbit Anti-WHSC1/NSD2 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST
Fresh lysates were used in this WB.

Exposure time: 3 minutes

All lanes:
Western blot - Anti-WHSC1/NSD2 antibody [EPR23777-107] (ab259940) at 1/1000 dilution

Lane 1:
HeLa (human cervix adenocarcinoma epithelial cell), whole cell lysate at 20 µg

Lane 2:
293T (human embryonic kidney epithelial cell), whole cell lysate at 20 µg

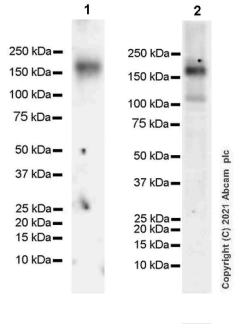
Lane 3:
NIH/3T3 (mouse embryonic fibroblast), whole cell lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/100000 dilution

Predicted band size: 152 kDa

Observed band size: 152 kDa



Western blot - Anti-WHSC1/NSD2 antibody [EPR23777-107] (ab259940)

WHSC1/NSD2 Western blot staining using rabbit Anti-WHSC1/NSD2 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST
Lane 1 of this blot was developed using a higher sensitivity ECL substrate.

Exposure time: 3 minutes

All lanes:
Western blot - Anti-WHSC1/NSD2 antibody [EPR23777-107] (ab259940) at 1/1000 dilution

Lane 1:
PC-3 (human prostate adenocarcinoma epithelial cell), whole cell lysate at 10 µg

Lane 2:
Neuro-2a (mouse neuroblastoma neuroblast), whole cell lysate at 10 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/100000 dilution

Predicted band size: 152 kDa

Observed band size: 152 kDa

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