Product Datasheet

Lysine (K)-specific Demethylase 4C/KDM4C/JMJD2C Antibody - BSA Free

NBP1-49600

Unit Size: 0.1 ml

Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.

Reviews: 1 Publications: 12

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NBP1-49600

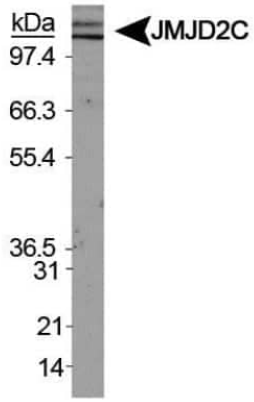
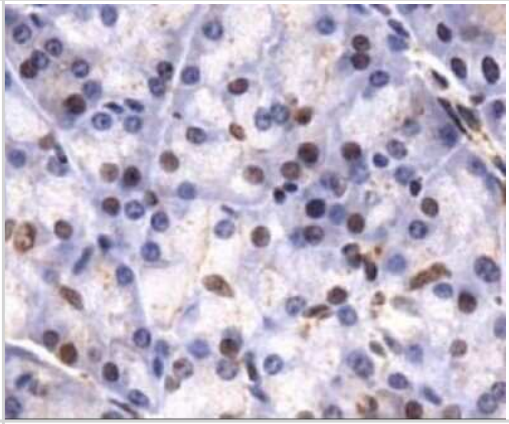
Lysine (K)-specific Demethylase 4C/KDM4C/JMJD2C Antibody - BSA Free

Product Information	
Unit Size	0.1 ml
Concentration	1.0 mg/ml
Storage	Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.
Clonality	Polyclonal
Preservative	0.05% Sodium Azide
Isotype	IgG
Purity	Immunogen affinity purified
Buffer	PBS

Product Description	
Description	Novus Biologicals Rabbit Lysine (K)-specific Demethylase 4C/KDM4C/JMJD2C Antibody - BSA Free (NBP1-49600) is a polyclonal antibody validated for use in IHC, WB, ICC/IF, Simple Western, IP and ChIP. Anti-Lysine (K)-specific Demethylase 4C/KDM4C/JMJD2C Antibody: Cited in 11 publications. All Novus Biologicals antibodies are covered by our 100% guarantee.
Host	Rabbit
Gene ID	23081
Gene Symbol	KDM4C
Species	Human, Mouse
Immunogen	A partial recombinant protein made to an internal region of the human JMJD2C protein (within residues 450-600). [Swiss-Prot Q9H3R0]
Notes	Manufactured by Genomic Antibody Technology™. GAT FAQs

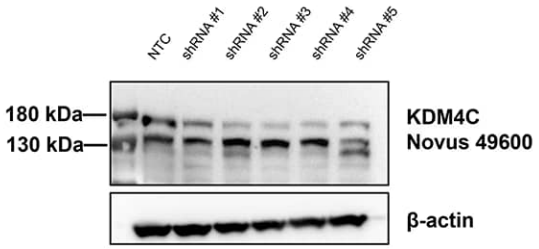
Product Application Details	
Applications	Western Blot, Simple Western, Immunohistochemistry-Paraffin, Chromatin Immunoprecipitation, Immunocytochemistry/ Immunofluorescence, Immunohistochemistry, Immunoprecipitation, Chromatin Immunoprecipitation (ChIP), Knockdown Validated
Recommended Dilutions	Western Blot 1:1000, Simple Western 1:12.5, Chromatin Immunoprecipitation reported in scientific literature (PMID 23884959; 23129632), Immunohistochemistry 1:100, Immunocytochemistry/ Immunofluorescence 1:100, Immunoprecipitation reported in scientific literature (PMID 23129632), Immunohistochemistry-Paraffin 1:100, Chromatin Immunoprecipitation (ChIP), Knockdown Validated Validated for Knockdown from a verified customer review.
Application Notes	In Western blot, a band is seen ~119 kDa in HeLa cells. In ICC/IF, nuclear staining was observed in HeLa cells. In IHC-P, staining was observed in the nuclei of mouse pancreas. Prior to immunostaining paraffin tissues, antigen retrieval with sodium citrate buffer (pH 6.0) is recommended. In Simple Western only 10 - 15 uL of the recommended dilution is used per data point. See Simple Western Antibody Database for Simple Western validation: Tested in HeLa lysate 1.0 mg/mL, separated by Size, antibody dilution of 1:12.5, apparent MW was 158 kDa. Separated by Size-Wes, Sally Sue/Peggy Sue.

Images

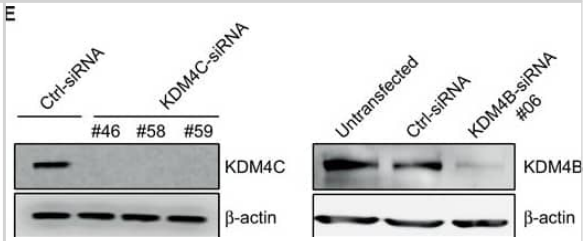
Western Blot: Lysine (K)-specific Demethylase 4C/KDM4C/JMJD2C Antibody [NBP1-49600] - Analysis of JMJD2C in HeLa nuclear extracts.	
Immunocytochemistry/Immunofluorescence: Lysine (K)-specific Demethylase 4C/KDM4C/JMJD2C Antibody [NBP1-49600] - NIH3T3 cells were fixed in 4% paraformaldehyde for 10 minutes and permeabilized in 0.5% Triton X-100 in PBS for 5 minutes. The cells were incubated with anti-Lysine (K)-specific Demethylase 4C/KDM4C/JMJD2C Antibody NBP1-49600 at 2 ug/ml overnight at 4C and detected with an anti-rabbit Dylight 488 (Green) at a 1:1000 dilution for 60 minutes. Nuclei were counterstained with DAPI (Blue). Cells were imaged using a 100X objective and digitally deconvolved.	
Immunohistochemistry-Paraffin: Lysine (K)-specific Demethylase 4C/KDM4C/JMJD2C Antibody [NBP1-49600] - Staining of JMJD2C in paraffin embedded mouse pancreas using DAB with hematoxylin counterstain.	
Immunocytochemistry/Immunofluorescence: Lysine (K)-specific Demethylase 4C/KDM4C/JMJD2C Antibody [NBP1-49600] - HeLa cells were fixed in 4% paraformaldehyde for 10 minutes and permeabilized in 0.5% Triton X-100 in PBS for 5 minutes. The cells were incubated with anti-Lysine (K)-specific Demethylase 4C/KDM4C/JMJD2C Antibody NBP1-49600 at 2 ug/ml overnight at 4C and detected with an anti-rabbit Dylight 488 (Green) at a 1:1000 dilution for 60 minutes. Nuclei were counterstained with DAPI (Blue). Cells were imaged using a 100X objective and digitally deconvolved.	

Simple Western: Lysine (K)-specific Demethylase 4C/KDM4C/JMJD2C Antibody [NBP1-49600] - Simple Western lane view shows a specific band for JMJD2C in 1.0 mg/ml of HeLa lysate. This experiment was performed under reducing conditions using the 12-230 kDa separation system.

Western Blot: Rabbit Polyclonal Lysine (K)-specific Demethylase 4C/KDM4C/JMJD2C Antibody [NBP1-49600] - shRNA Knockdown using 4C/KDM4C/JMJD2C Antibody. Image from a verified customer review.



KDM4C, but not KDM4B, depletion increases chromosomal segregation errors during mitosis. (A)–(D) Representative images showing normal and defective mitotic U2OS cells depleted of KDM4C. Cells were subjected to immunofluorescence analysis using Pericentrin (green) and α-tubulin antibodies (red). DNA is stained with DAPI (blue). (A) Normal and abnormal metaphase with misaligned chromosome (indicated by white arrow). (B) Normal and abnormal anaphase with either lagging chromosomes or anaphase bridge (indicated by white arrows). (C) Abnormal telophase with either lagging chromosomes or telophase bridge (indicated by white arrows). (D) Multipolar metaphase. (E) KDM4B and KDM4C knockdown by western blotting. U2OS cells were transfected with either control or different sequences of KDM4B and KDM4C Stealth siRNA (Invitrogen). Protein extracts were prepared 72 h after transfection and immunoblotted with KDM4B and KDM4C antibody. β-Actin is used as a loading control. (F) A histogram showing the percentage of metaphases with misaligned chromosomes 72 h after transfection with control and different KDM4B-C siRNA sequences. KDM4C, but not KDM4B, depletion increases the frequency of metaphase cells with misaligned chromosomes. n, number of metaphase cells counted. Error bars represent standard deviation from two independent experiments. (G) KDM4C, but not KDM4B, depletion increases the frequency of anaphase–telophase cells with either lagging chromosomes or anaphase–telophase bridges. As in (F), except that the histogram shows the percentage of defective anaphase–telophase cells. Image collected and cropped by CiteAb from the following open publication (https://pubmed.ncbi.nlm.nih.gov/24728997), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Publications

Li Z, Peluffo G, Stevens L et al. KDM4C inhibition blocks tumor growth in basal breast cancer by promoting cathepsin L-mediated histone H3 cleavage Nature genetics 2025-06-02 [PMID: 40457074]

Thaler R, Khani F, Sturmlechner I et al. Vitamin C epigenetically controls osteogenesis and bone mineralization Nature communications 2022-10-06 [PMID: 36202795] (WB, Mouse)

Bao L, Chen Y, et al. Methylation of hypoxia-inducible factor (HIF)-1 alpha by G9a/GLP inhibits HIF-1 transcriptional activity and cell migration. Nucleic Acids Res 2018-07-27 [PMID: 29860315] (IP, Human)

Claycombe-Larson KJ, Bundy A, Lance EB et al. Postnatal exercise protects offspring from high-fat diet-induced reductions in subcutaneous adipocyte beiging in C57Bl6/J Mice The Journal of nutritional biochemistry 2021-09-10 [PMID: 34517093] (WB, Mouse)

Gao Y, Liu Y, Liu Y Et Al. UHRF1 promotes androgen receptor-regulated CDC6 transcription and anti-androgen receptor drug resistance in prostate cancer through KDM4C-Mediated chromatin modifications Cancer letters 2021-07-12 [PMID: 34265399]

Kupershmit I, Khoury-Haddad H et al. KDM4C (GASC1) lysine demethylase is associated with mitotic chromatin and regulates chromosome segregation during mitosis. Nucleic Acids Res 2014-01-06 [PMID: 24728997] (ICC/IF, Human)

Wu MC, Cheng HH, Yeh TS et al. KDM4B is a coactivator of c-Jun and involved in gastric carcinogenesis Cell Death Dis 2019-01-25 [PMID: 30683841] (WB, Human)

Kalainayakan SP, Ghosh P, Dey S et al. Cyclopamine tartrate, a modulator of hedgehog signaling and mitochondrial respiration, effectively arrests lung tumor growth and progression Sci Rep 2019-02-07 [PMID: 30723259] (IHC-P, Mouse)

Xu M, Moresco JJ, Chang M et al. SHMT2 and the BRCC36/BRISC deubiquitinase regulate HIV-1 Tat K63-ubiquitylation and destruction by autophagy PLoS Pathog. 2018-05-23 [PMID: 29791506] (WB, Human)

Qiu MT, Fan Q, Zhu Z et al. KDM4B and KDM4A promote endometrial cancer progression by regulating androgen receptor, c-myc, and p27kip1. Oncotarget 2015-10-13 [PMID: 26397136] (WB)

Lee HY, Yang EG, Park H et al. Hypoxia Enhances the Expression of Prostate-Specific Antigen by Modifying the Quantity and Catalytic Activity of Jumonji C Domain-Containing Histone Demethylases. Carcinogenesis 2013-07-24 [PMID: 23884959] (Chemotaxis, ICC/IF, Human)

Luo W, Chang R, Zhong J, Pandey A, Semenza GL. Histone demethylase JMJD2C is a coactivator for hypoxia-inducible factor 1 that is required for breast cancer progression. Proc Natl Acad Sci U S A. 2012-12-04 [PMID: 23129632] (IP, WB, Mouse, Human)

Procedures

Western Blot protocol for JMJD2C Antibody (NBP1-49600)

Western Blot Protocol

1. Perform SDS-PAGE on samples to be analyzed, loading 40 ug of total protein per lane.
2. Transfer proteins to membrane according to the instructions provided by the manufacturer of the membrane and transfer apparatus.
3. Stain according to standard Ponceau S procedure (or similar product) to assess transfer success, and mark molecular weight standards where appropriate.
4. Rinse the blot.
5. Block the membrane using standard blocking buffer for at least 1 hour.
6. Wash the membrane in wash buffer three times for 10 minutes each.
7. Dilute the rabbit anti-JMJD2C primary antibody (NBP1-49600) in blocking buffer and incubate 1 hour at room temperature.
8. Wash the membrane in wash buffer three times for 10 minutes each.
9. Apply diluted rabbit-IgG HRP-conjugated secondary antibody in blocking buffer (as per manufacturers instructions) and incubate 1 hour at room temperature.
10. Wash the blot in wash buffer three times for 10 minutes each (this step can be repeated as required to reduce background).
11. Apply the detection reagent of choice in accordance with the manufacturers instructions.

*Note: Tween-20 can be added to the blocking or antibody dilution buffer at a final concentration of 0.05-0.2%.

Immunohistochemistry-Paraffin protocol for JMJD2C Antibody (NBP1-49600)

Immunohistochemistry-Paraffin Embedded Sections

Antigen Unmasking:
Bring slides to a boil in 10 mM sodium citrate buffer (pH 6.0) then maintain at a sub-boiling temperature for 10 minutes. Cool slides on bench-top for 30 minutes.

Staining:
1. Wash sections in deionized water three times for 5 minutes each.
2. Wash sections in wash buffer for 5 minutes.
3. Block each section with 100-400 ul blocking solution for 1 hour at room temperature.
4. Remove blocking solution and add 100-400 ul diluted primary antibody. Incubate overnight at 4C.
5. Remove antibody solution and wash sections in wash buffer three times for 5 minutes each.
6. Add 100-400 ul biotinylated diluted secondary antibody. Incubate 30 minutes at room temperature.
7. Remove secondary antibody solution and wash sections three times with wash buffer for 5 minutes each.
8. Add 100-400 ul Streptavidin-HRP reagent to each section and incubate for 30 minutes at room temperature.
9. Wash sections three times in wash buffer for 5 minutes each.
10. Add 100-400 ul DAB substrate to each section and monitor staining closely.
11. As soon as the sections develop, immerse slides in deionized water.
12. Counterstain sections in hematoxylin.
13. Wash sections in deionized water two times for 5 minutes each.
14. Dehydrate sections.
15. Mount coverslips.

Immunocytochemistry/Immunofluorescence Protocol for JMJD2C Antibody (NBP1-49600)

Immunocytochemistry Protocol

Culture cells to appropriate density in 35 mm culture dishes or 6-well plates.

1. Remove culture medium and add 10% formalin to the dish. Fix at room temperature for 30 minutes.
2. Remove the formalin and add ice cold methanol. Incubate for 5-10 minutes.
3. Remove methanol and add washing solution (i.e. PBS). Be sure to not let the specimen dry out. Wash three times for 10 minutes.
4. To block nonspecific antibody binding incubate in 10% normal goat serum from 1 hour to overnight at room temperature.
5. Add primary antibody at appropriate dilution and incubate at room temperature from 2 hours to overnight at room temperature.
6. Remove primary antibody and replace with washing solution. Wash three times for 10 minutes.
7. Add secondary antibody at appropriate dilution. Incubate for 1 hour at room temperature.
8. Remove antibody and replace with wash solution, then wash for 10 minutes. Add Hoechst 33258 to wash solution at 1:25,0000 and incubate for 10 minutes. Wash a third time for 10 minutes.
9. Cells can be viewed directly after washing. The plates can also be stored in PBS containing Azide covered in Parafilm (TM). Cells can also be cover-slipped using Fluoromount, with appropriate sealing.

*The above information is only intended as a guide. The researcher should determine what protocol best meets their needs. Please follow safe laboratory procedures.

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Products Related to NBP1-49600

NBP1-44968	NTERA-2 Whole Cell Lysate
NBP2-33376H	Blue Marker Antibody (6F4-F6) [HRP]
HAF008	Goat anti-Rabbit IgG Secondary Antibody [HRP]
NB7160	Goat anti-Rabbit IgG (H+L) Secondary Antibody [HRP]
NBP2-24891	Rabbit IgG Isotype Control

Limitations

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