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JMJD6 Antibody
Catalog # ASC10973

Specification

JMJD6 Antibody - Product Information

Application	**WB, IHC-P, IF, E**
Primary Accession	Q6NYC1
Other Accession	Q6NYC1, 67461014
Reactivity	**Human, Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**IgG**
Application Notes	**JMJD6 antibody can be used for detection of JMJD6 by Western blot at 1 - 2 µg/mL. Antibody can also be used for immunohistochemistry starting at 2.5 µg/mL. For immunofluorescence start at 20 µg/mL.**

JMJD6 Antibody - Additional Information

Gene ID	**23210**

Target/Specificity
JMJD6;

Reconstitution & Storage
JMJD6 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

Precautions
JMJD6 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

JMJD6 Antibody - Protein Information

Name JMJD6 (HGNC:19355)

Function
Dioxygenase that can both act as a arginine demethylase and a lysyl-hydroxylase (PubMed:17947579, PubMed:20684070, PubMed:21060799, PubMed:22189873, PubMed:24498420). Acts as a lysyl-hydroxylase that catalyzes 5-hydroxylation on specific lysine residues of target proteins such as U2AF2/U2AF65 and LUC7L2. Regulates RNA splicing by mediating 5-hydroxylation of U2AF2/U2AF65, affecting the pre-mRNA splicing activity of U2AF2/U2AF65 (PubMed:19574390). Hydroxylates

its own N-terminus, which is required for homooligomerization (PubMed:22189873). Plays a role in the regulation of nucleolar liquid- liquid phase separation (LLPS) by post-translationally modifying LIAT1 at its lysine-rich domain which inhibits LIAT1 nucleolar targeting (By similarity). In addition to peptidyl-lysine 5-dioxygenase activity, may act as an RNA hydroxylase, as suggested by its ability to bind single strand RNA (PubMed:20679243, PubMed:29176719). Also acts as an arginine demethylase which preferentially demethylates asymmetric dimethylation (PubMed:17947579, PubMed:24360279, PubMed:24498420). Demethylates histone H3 at 'Arg-2' (H3R2me) and histone H4 at 'Arg-3' (H4R3me), including mono-, symmetric di- and asymmetric dimethylated forms, thereby playing a role in histone code (PubMed:17947579, PubMed:24360279). However, histone arginine demethylation may not constitute the primary activity in vivo (PubMed:17947579, PubMed:21060799, PubMed:22189873). In collaboration with BRD4, interacts with the positive transcription elongation factor b (P-TEFb) complex in its active form to regulate polymerase II promoter-proximal pause release for transcriptional activation of a large cohort of genes. On distal enhancers, so called anti-pause enhancers, demethylates both histone H4R3me2 and the methyl cap of 7SKsnRNA leading to the dismissal of the 7SKsnRNA:HEXIM1 inhibitor complex. After removal of repressive marks, the complex BRD4:JMJD6 attract and retain the P-TEFb complex on chromatin, leading to its activation, promoter-proximal polymerase II pause release, and transcriptional activation (PubMed:24360279). Demethylates other arginine methylated- proteins such as ESR1 (PubMed:24498420). Has no histone lysine demethylase activity (PubMed:21060799). Required for differentiation of multiple organs during embryogenesis. Acts as a key regulator of hematopoietic differentiation: required for angiogenic sprouting by regulating the pre-mRNA splicing activity of U2AF2/U2AF65 (By similarity). Seems to be necessary for the regulation of macrophage cytokine responses (PubMed:15622002).

Cellular Location
Nucleus, nucleoplasm. Nucleus, nucleolus. Cytoplasm. Note=Mainly found throughout the nucleoplasm outside of regions containing heterochromatic DNA, with some localization in nucleolus. During mitosis, excluded from the nucleus and reappears in the telophase of the cell cycle.

Tissue Location
Highly expressed in the heart, skeletal muscle and kidney. Expressed at moderate or low level in brain, placenta, lung, liver, pancreas, spleen, thymus, prostate, testis and ovary. Up- regulated in many patients with chronic pancreatitis. Expressed in nursing thymic epithelial cells.

JMJD6 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot

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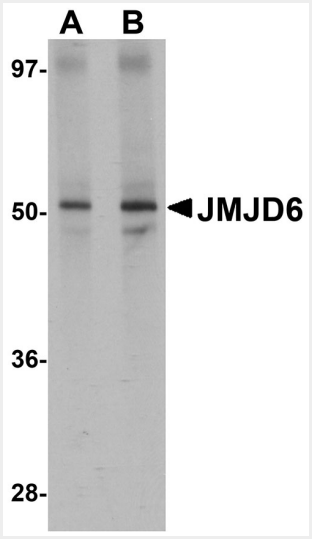
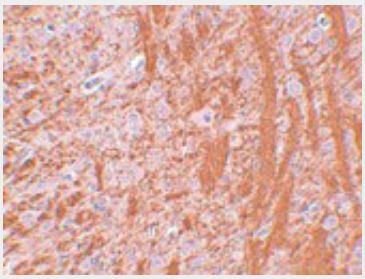
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

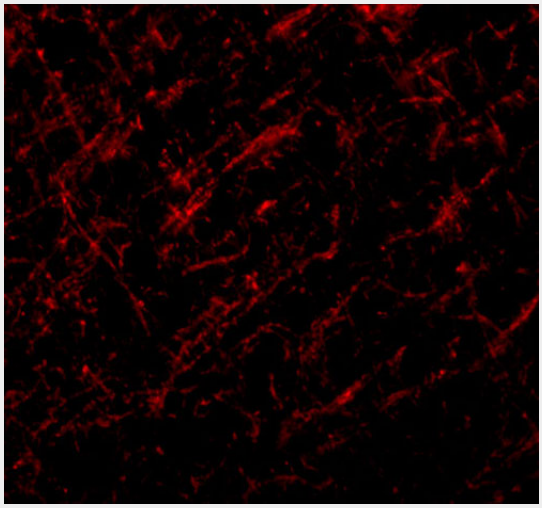
JMJD6 Antibody - Images



Western blot analysis of JMJD6 in human brain tissue lysate with JMJD6 antibody at (A) 1 and (B) 2 µg/mL.



Immunohistochemistry of JMJD6 in rat brain tissue with JMJD6 antibody at 2.5 µg/mL.



Immunofluorescence of JMJD6 in rat brain tissue with JMJD6 antibody at 20 µg/mL.

JMJD6 Antibody - Background

JMJD6 Antibody: The jumonji domain-containing protein (JMJD) family is defined by the presence of the JmjC domain that is observed in several diverse species. JMJD6 was initially identified as a membrane protein that participates in phagocytosis but recent studies have shown that it has other functions when it is expressed in the cytosol and nucleus. JMJD6 is thought to play important roles in regulation of development and differentiation as knockdown experiments in mice resulted in neonatal lethality with severe defects in the morphology of numerous organs. JMJD6 also can catalyze the lysyl-hydroxylation of U2AF65, a protein involved with RNA splicing, suggesting that some of the functions attributed to JMJD6 may be due to its regulatory activity of RNA splicing.

JMJD6 Antibody - References

Takeuchi T, Watanabe Y, Takano-Shimizu T, et al. Roles of jumonji and jumonji family genes in chromatin regulation and development. Dev. Dyn.2006; 235:2449-59.
Fadok VA, Bratton DL, Rose DM, et al. A receptor for phosphatidylserine-specific clearance of apoptotic cells. Nature2000; 405:85-90.
Zakharova L, Dadsetan S, and Fomina AF. Endogenous JMJD6 gene product is expressed at the cell surface and regulates phagocytosis in immature monocyte-like activated THP-1 cells. J. Cell. Phys.2009; 221:84-91.
Bose J, Gruber AD, Helming L, et al. The phosphatidylserine receptor has essential functions during embryogenesis but not in apoptotic cell removal. J. Biol.2004; 3:15.