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JMJD6 Antibody

Catalog # ASC10973

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q6NYC1
Other Accession	Q6NYC1, 67461014
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	46462
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	JMJD6 antibody can be used for detection of JMJD6 by Western blot at 1 - 2 g/mL. Antibody can also be used for immunohistochemistry starting at 2.5 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	23210
Other Names	Bifunctional arginine demethylase and lysyl-hydroxylase JMJD6, 1.14.11.-, Histone arginine demethylase JMJD6, JmjC domain-containing protein 6, Jumonji domain-containing protein 6, Lysyl-hydroxylase JMJD6, Peptide-lysine 5-dioxygenase JMJD6, Phosphatidylserine receptor, Protein PTDSR, JMJD6, KIAA0585, PTDSR
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.

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.

Background

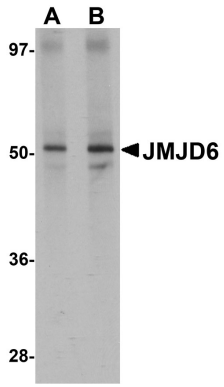
JMJD6 Antibody: The jumonji domain-containing protein (JMJD) family is defined by the presence of the JmjC domain that is observed in several diverse species. JMJD6 was initially identified as a membrane protein that participates in phagocytosis but recent studies have shown that it has other functions 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.

References

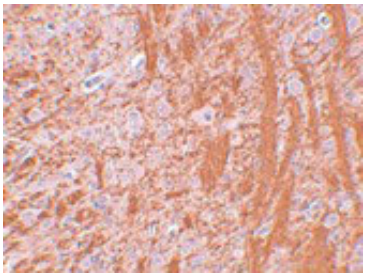
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Bose J, Gruber AD, Helming L, et al. The phosphatidylserine receptor has essential functions during embryogenesis but not in apoptotic cell removal. J. Biol.2004; 3:15.

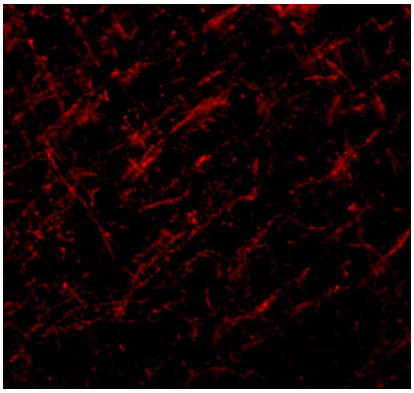
Images



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.

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