10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

HDAC9 Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1109A

Product Information

Application	WB, IP, IF, IHC-P, E
Primary Accession	Q9UKV0
Other Accession	Q99N13, Q5ZKH6
Reactivity	Human, Mouse
Predicted	Chicken, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	111297
Antigen Region	2-32

Additional Information

Gene ID	9734
Other Names	Histone deacetylase 9, HD9, Histone deacetylase 7B, HD7, HD7b, Histone deacetylase-related protein, MEF2-interacting transcription repressor MITR, HDAC9, HDAC7, HDAC7B, HDRP, KIAA0744, MITR
Target/Specificity	This HDAC9 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 2-32 amino acids from the N-terminal region of human HDAC9.
Dilution	WB~~1:1000 IP~~1:100 IF~~1:1,000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	HDAC9 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	HDAC9
Synonyms	HDAC7, HDAC7B, HDRP, KIAA0744, MITR

Function	Responsible for the deacetylation of lysine residues on the N-terminal part of the core histones (H2A, H2B, H3 and H4). Histone deacetylation gives a tag for epigenetic repression and plays an important role in transcriptional regulation, cell cycle progression and developmental events. Represses MEF2-dependent transcription.
Cellular Location	Nucleus.
Tissue Location	Broadly expressed, with highest levels in brain, heart, muscle and testis. Isoform 3 is present in human bladder carcinoma cells (at protein level).

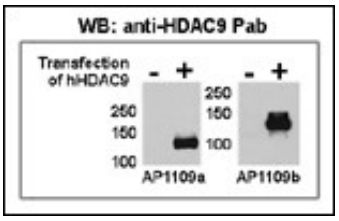
Background

Histones play a critical role in transcriptional regulation, cell cycle progression, and developmental events. Histone acetylation/deacetylation alters chromosome structure and affects transcription factor access to DNA. The protein encoded by this gene has sequence homology to members of the histone deacetylase family. This gene is orthologous to the Xenopus and mouse MITR genes. The MITR protein lacks the histone deacetylase catalytic domain. It represses MEF2 activity through recruitment of multicomponent corepressor complexes that include CtBP and HDACs. This encoded protein may play a role in hematopoiesis. Multiple alternatively spliced transcripts have been described for this gene but the full-length nature of some of them has not been determined.

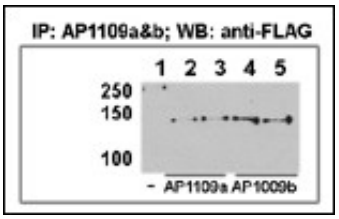
References

Petrie, K., et al., J. Biol. Chem. 278(18):16059-16072 (2003). David, D., et al., Genomics 81(5):489-503 (2003). Mahlknecht, U., et al., Biochem. Biophys. Res. Commun. 293(1):182-191 (2002). Zhou, X., et al., Proc. Natl. Acad. Sci. U.S.A. 98(19):10572-10577 (2001). Zhang, C.L., et al., J. Biol. Chem. 276(1):35-39 (2001).

Images



Both anti-HDAC9 N-term (AP1109a) and C-term (AP1109b) Pab were tested by WB and IP-WB using HeLa and HeLa-HDAC9 transfected cells. Top figure shows both Pab specifically detect HDAC9 in HeLa-HDAC9 transfected cell but not HeLa alone.



This figure shows that both Pab can immunoprecipitate (IP) HDAC9 from HeLa-HDAC9 tranfected cells. (Data kindly provided by Dr. Zhigang Yuan, H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL).

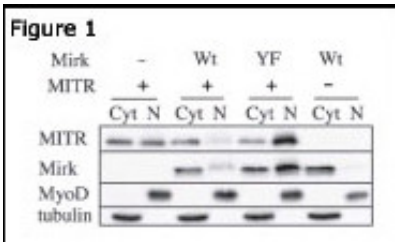


Figure 1: Immunoblots for MITR (AP1109a HDAC9 N-term antibody), Mirk, MyoD and tubulin proteins are shown for cytoplasmic (Cyt) and nuclear (N) extracts from undifferentiated C2C12 myoblasts. Before cell collection for fractionation, the cells are transfected with plasmids coding for Mirk (Wt), kinase-inactive Mirk (YF) or MITR. Data courtesy of laboratory of Dr. Eileen Friedman. Dept of Pathology, Upstate Medical University, State University of New York.

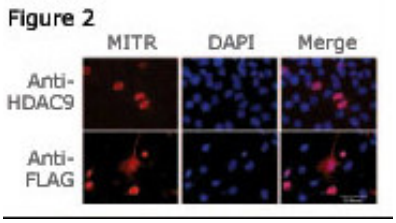
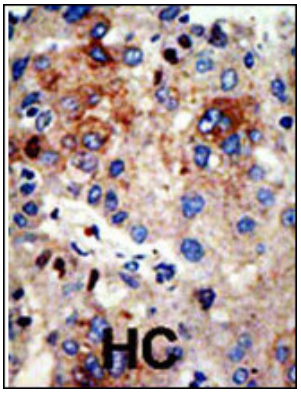


Figure 2: Immunofluorescence staining of MITR for a compartmentalization study in undifferentiated C2C12 myoblasts transfected with a MITR-expressing plasmid. MITR is detected by using the HDAC9 N-term antibody (top panel) or a FLAG antibody (bottom panel) detecting a FLAG epitope fused at the N-term end of the MITR construct. Data courtesy of laboratory of Dr. Eileen Friedman. Dept of Pathology, Upstate Medical University, State University of New York.



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.

Citations

- Nucleocytoplasmic Shuttling of Histone Deacetylase 9 Controls Activity-Dependent Thalamocortical Axon Branching.
- Novel Interaction of Class IIb Histone Deacetylase 6 (HDAC6) with Class IIa HDAC9 Controls Gonadotropin Releasing Hormone (GnRH) Neuronal Cell Survival and Movement.
- Nucleocytoplasmic translocation of HDAC9 regulates gene expression and dendritic growth in developing cortical neurons.
- Mirk/dyrk1B decreases the nuclear accumulation of class II histone deacetylases during skeletal muscle differentiation.