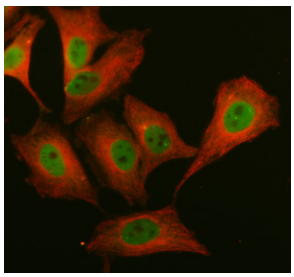
HDAC4 Antibody / Histone Deacetylase 4 Antibody (R32738)

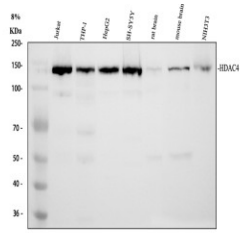
Catalog No.	Formulation	Size
R32738	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

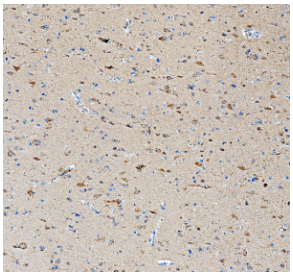
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	P56524
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml Immunofluorescence: 5ug/ml Immunoprecipitation: 2ug per 500ug of lysate
Limitations	This HDAC4 Antibody / Histone Deacetylase 4 Antibody is available for research use only.



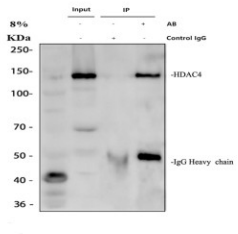
HDAC4 Antibody HeLa Cell IF. Immunofluorescence analysis of human HeLa cells using HDAC4 Antibody and an Alpha Tubulin Antibody. Cells underwent enzyme antigen retrieval for 15 minutes, were blocked with 10% goat serum and incubated with both primary antibodies at 5 ug/ml overnight at 4Â°C. HDAC4 was visualized with Fluoro488-conjugated secondary antibody (green), while alpha tubulin was detected with Cy3-conjugated secondary antibody (red). Strong HDAC4 staining is observed predominantly in the nuclei. This HDAC4 Antibody, also called a Histone Deacetylase 4 Antibody, demonstrates HDAC4 localization in human HeLa cells and supports studies of Class IIa HDAC signaling and transcriptional regulation.



HDAC4 Antibody Human, Mouse and Rat WB. Western blot analysis of HDAC4 in human Jurkat, THP-1, HepG2 and SH-SY5Y cell lysates, rat brain tissue lysate, and mouse brain tissue and NIH3T3 cell lysates using HDAC4 Antibody. Lane 1: Jurkat; Lane 2: THP-1; Lane 3: HepG2; Lane 4: SH-SY5Y; Lane 5: rat brain; Lane 6: mouse brain; Lane 7: NIH3T3. A major band is detected at approximately 140 kDa. Although the calculated molecular weight of HDAC4 is approximately 119 kDa, migration at a higher apparent molecular weight has been reported and can reflect extensive post-translational modification, including phosphorylation. This HDAC4 Antibody, also called a Histone Deacetylase 4 Antibody, detects HDAC4 across human, rat and mouse samples and supports studies of Class IIa HDAC signaling and transcriptional regulation.



HDAC4 Antibody Human Cerebral Cortex IHC. IHC staining of FFPE human cerebral cortex tissue using HDAC4 Antibody. Heat-induced epitope retrieval was performed in EDTA buffer (pH 8.0), followed by blocking with 10% goat serum. The tissue was incubated with the antibody at 2 ug/ml overnight at 4Â°C, followed by peroxidase-conjugated goat anti-rabbit IgG and DAB detection. Positive HDAC4 staining is observed in cells within the cerebral cortex. This HDAC4 Antibody, also called a Histone Deacetylase 4 Antibody, demonstrates HDAC4 expression in human brain tissue and supports studies of Class IIa HDAC signaling, neuronal transcription and epigenetic regulation.



HDAC4 Antibody by IP in human Jurkat cells. Immunoprecipitation of HDAC4 from Jurkat whole-cell lysate using HDAC4 Antibody. Lane 1: Jurkat lysate input (30 ug); lane 2: immunoprecipitation with rabbit control IgG; lane 3: immunoprecipitation using 2 ug antibody and 500 ug Jurkat lysate. Western blot detection was performed using the same antibody at 0.5 ug/ml. A prominent HDAC4 band is observed at approximately 140 kDa in the input and antibody IP lanes, but not in the IgG control, demonstrating successful enrichment. The observed molecular weight exceeds the predicted 119 kDa, potentially reflecting post-translational modifications, including phosphorylation. This Histone Deacetylase 4 Antibody recognizes a class IIa histone deacetylase involved in transcriptional regulation.

Description

HDAC4 Antibody / Histone Deacetylase 4 Antibody recognizes HDAC4, a member of the Class IIa histone deacetylase family that participates in chromatin regulation and transcriptional control. HDAC4 functions as a signal-responsive transcriptional coregulator and can shuttle between the nucleus and cytoplasm in response to cellular signaling. Through interactions with transcription factors and chromatin-associated regulatory proteins, HDAC4 helps connect extracellular and intracellular signals with changes in gene expression. These properties make HDAC4 particularly relevant to studies of epigenetic regulation, signal transduction and mechanisms controlling cell differentiation and tissue-specific transcription.

HDAC4 belongs to the Class IIa HDAC group together with HDAC5, HDAC7 and HDAC9. Unlike Class I histone deacetylases, Class IIa HDACs possess extended N-terminal regulatory regions that mediate interactions with transcription factors and signaling proteins. HDAC4 can associate with transcriptional repressors and recruit enzymatically active corepressor complexes to regulate chromatin and gene expression. Its activity is therefore determined not simply by deacetylase function, but also by protein-protein interactions, phosphorylation and regulated subcellular localization.

Phosphorylation provides an important mechanism for controlling HDAC4 localization and function. Signal-dependent phosphorylation creates binding sites for 14-3-3 proteins and promotes export of HDAC4 from the nucleus, reducing its ability to participate in transcriptional repression. Dephosphorylation and changes in nuclear-cytoplasmic trafficking can return HDAC4 to the nucleus. This dynamic regulation allows signaling pathways to modify transcriptional programs

through changes in HDAC4 localization. An HDAC4 Antibody can therefore support studies examining the relationship between cellular signaling, chromatin regulation and transcriptional responses.

HDAC4 interacts with members of the MEF2 transcription factor family and has important roles in differentiation and tissue development. HDAC4-dependent regulation has been studied extensively in skeletal muscle, bone, cartilage, neuronal and cardiovascular biology. By modulating transcription factor activity and chromatin-associated regulatory complexes, HDAC4 contributes to programs governing cellular differentiation, development and adaptation to physiological signals. Altered HDAC4 expression, localization or signaling has also been investigated in cancer, neurological disorders and other disease-related processes in which transcriptional and epigenetic regulation are disrupted.

The ability of HDAC4 to respond to signaling pathways while regulating transcription makes it an important molecular link between signal transduction and epigenetic control. Its phosphorylation-dependent trafficking, transcription factor interactions and participation in chromatin-associated complexes provide multiple mechanisms through which cellular signals can influence gene expression. NSJ Bioreagents supplies antibodies to HDAC4 and other proteins involved in cellular signaling and transcriptional regulation. An HDAC4 Antibody can support research on Histone Deacetylase 4, Class IIa HDAC biology, chromatin regulation, transcriptional control and signal-dependent gene expression.

For related targets that connect cellular signaling pathways with downstream transcriptional and regulatory responses, explore our Signal Transduction Antibodies page.

Application Notes

Optimal dilution of the HDAC4 Antibody / Histone Deacetylase 4 Antibody should be determined by the researcher.

Immunogen

Amino acids Q4-Q213 from the human protein were used as the immunogen for the HDAC4 antibody.

Storage

After reconstitution, the HDAC4 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

HDAC4 antibody, Histone Deacetylase 4 antibody, Histone Deacetylase-4 antibody, Class IIa Histone Deacetylase 4 antibody, KIAA0288 antibody

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