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RUVBL1 Antibody

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1922e

Product Information

Application	WB, IHC-P, FC, E
Primary Accession	Q9Y265
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB23096
Calculated MW	50228

Additional Information

Gene ID	8607
Other Names	RuvB-like 1, 49 kDa TATA box-binding protein-interacting protein, 49 kDa TBP-interacting protein, 54 kDa erythrocyte cytosolic protein, ECP-54, INO80 complex subunit H, Nuclear matrix protein 238, NMP 238, Pontin 52, TIP49a, TIP60-associated protein 54-alpha, TAP54-alpha, RUVBL1, INO80H, NMP238, TIP49, TIP49A
Target/Specificity	This RUVBL1 antibody is generated from rabbits immunized with human RUVBL1 recombinant protein.
Dilution	WB~~1:1000 IHC-P~~1:100~500 FC~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
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	RUVBL1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	RUVBL1 (HGNC:10474)
Function	Possesses single-stranded DNA-stimulated ATPase and ATP- dependent DNA helicase (3' to 5') activity; hexamerization is thought to be critical for ATP

	hydrolysis and adjacent subunits in the ring- like structure contribute to the ATPase activity (PubMed:17157868, PubMed:33205750). Component of the NuA4 histone acetyltransferase complex which is involved in transcriptional activation of select genes principally by acetylation of nucleosomal histones H4 and H2A (PubMed:14966270). This modification may both alter nucleosome-DNA interactions and promote interaction of the modified histones with other proteins which positively regulate transcription (PubMed:14966270). This complex may be required for the activation of transcriptional programs associated with oncogene and proto-oncogene mediated growth induction, tumor suppressor mediated growth arrest and replicative senescence, apoptosis, and DNA repair (PubMed:14966270). The NuA4 complex ATPase and helicase activities seem to be, at least in part, contributed by the association of RUVBL1 and RUVBL2 with EP400. NuA4 may also play a direct role in DNA repair when recruited to sites of DNA damage (PubMed:14966270). Component of a SWR1-like complex that specifically mediates the removal of histone H2A.Z/H2AZ1 from the nucleosome (PubMed:24463511). Proposed core component of the chromatin remodeling INO80 complex which exhibits DNA- and nucleosome-activated ATPase activity and catalyzes ATP-dependent nucleosome sliding (PubMed:16230350, PubMed:21303910). Plays an essential role in oncogenic transformation by MYC and also modulates transcriptional activation by the LEF1/TCF1-CTNNB1 complex (PubMed:10882073, PubMed:16014379). Essential for cell proliferation (PubMed:14506706). May be able to bind plasminogen at cell surface and enhance plasminogen activation (PubMed:11027681).
Cellular Location	Nucleus matrix. Nucleus, nucleoplasm. Cytoplasm. Membrane Cytoplasm, cytoskeleton, microtubule organizing center, centrosome Dynein axonemal particle {ECO:0000250|UniProtKB:Q9DE26}. Note=Mainly localized in the nucleus, associated with nuclear matrix or in the nuclear cytosol, although it is also present in the cytoplasm and associated with the cell membranes. In prophase and prometaphase it is located at the centrosome and the branching microtubule spindles. After mitotic nuclear membrane disintigration it accumulates at the centrosome and sites of tubulin polymerization. As cells pass through metaphase and into telophase it is located close to the centrosome at the early phase of tubulin polymerization. In anaphase it accumulates at the zone of tubule interdigitation. In telophase it is found at polar tubule overlap, and it reappears at the site of chromosomal decondensation in the daughter cells
Tissue Location	Ubiquitously expressed with high expression in heart, skeletal muscle and testis

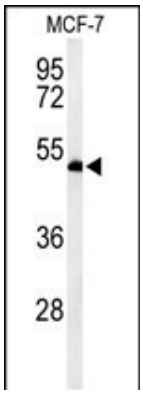
Background

RUVBL1 possesses single-stranded DNA-stimulated ATPase and ATP-dependent DNA helicase (3' to 5') activity. It is a component of the NuA4 histone acetyltransferase complex which is involved in transcriptional activation of select genes principally by acetylation of nucleosomal histone H4 and H2A. This modification may both alter nucleosome - DNA interactions and promote interaction of the modified histones with other proteins which positively regulate transcription. This complex may be required for the activation of transcriptional programs associated with oncogene and proto-oncogene mediated growth induction, tumor suppressor mediated growth arrest and replicative senescence, apoptosis, and DNA repair. The NuA4 complex ATPase and helicase activities seem to be, at least in part, contributed by the association of RUVBL1 and RUVBL2 with EP400. NuA4 may also play a direct role in DNA repair when recruited to sites of DNA damage. RUVBL1 plays an essential role in oncogenic transformation by MYC and also modulates transcriptional activation by the LEF1/TCF1 -CTNNB1 complex. High levels of autoantibodies against RUVBL1 are detected in sera of patients with autoimmune diseases such as polymyositis/dermatomyosistis and autoimmune hepatitis.

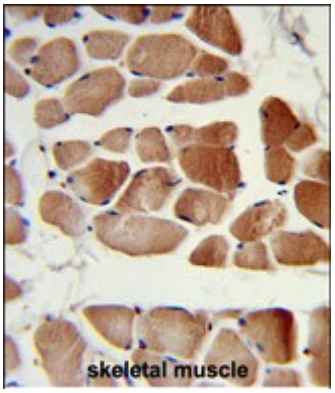
References

Feng, Y., et al., Cancer Res. 63(24):8726-8734 (2003).
Hawley, S.B., et al., J. Biol. Chem. 276(1):179-186 (2001).
Ikura, T., et al., Cell 102(4):463-473 (2000).
Salzer, U., et al., Biochim. Biophys. Acta 1446(3):365-370 (1999).
Makino, Y., et al., Biochem. Biophys. Res. Commun. 245(3):819-823 (1998).

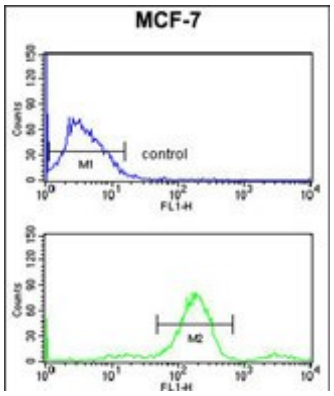
Images



Western blot analysis of RUVBL1 Antibody (Cat. #AP1922e) in MCF-7 cell line lysates (35ug/lane). RUVBL1 (arrow) was detected using the purified Pab.

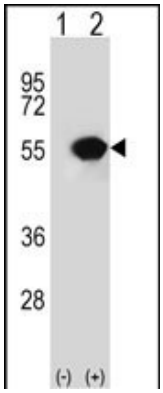


Formalin-fixed and paraffin-embedded human skeletal muscle reacted with RUVBL1 Antibody, which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.



RUVBL1 Antibody (Cat. #AP1922e) flow cytometry analysis of MCF-7 cells (bottom histogram) compared to a negative control cell (top histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

Western blot analysis of RUVBL1 (arrow) using rabbit polyclonal RUVBL1 Antibody (Cat. #AP1922e). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected (Lane 2) with the RUVBL1 gene.



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