Anti-Human RUVBL1, monoclonal (clone JH39.2.1A1)

Recommended name: RuvB-like 1, EC=3.6.4.12; **Alternative name(s):** 49 kDa TATA box-binding protein-interacting protein (Short name = 49 kDa TBP-interacting protein), 54 kDa erythrocyte cytosolic protein (Short name = ECP-54), INO80 complex subunit H, Nuclear matrix protein 238 (Short name = NMP 238), Pontin 52, TIP49a, TIP60-associated protein 54-alpha (Short name = TAP54-alpha)

Cat. No.	**m13-077**	**Quantity:**	**100 µg**
Lot. No.	**20140911.A.M**	**Storage:**	**-20˚C**

FOR RESEARCH USE ONLY NOT FOR USE IN HUMANS

Uniprot / NCBI Summary

UniProt
Primary Accession # Q9Y265
Secondary Accession # P82276

NCBI
GI # 4506753
GeneID 8607
Accession # NP_003698.1
GenBank Nucleotide # NM_003707.2

Molecular Weight 50,228 Da (1276 aa)

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. 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. This modification may both alter nucleosome - DNA interactions and promote interaction of the modified histones with other proteins which positively regulate transcription.

Continued on page 2.

Physical Characteristics

Quantity: 100 µg

Concentration: 1.0 mg/ml

Host / Isotype: mouse IgG2a

Clonality: monoclonal; JH39.2.1A1

Immunogen: recombinant protein corresponding to full-length human RUVBL1

Purification: affinity-chromatography using Protein G

Formulation: 30% glycerol, 1x PBS, 0.02% sodium azide

Specificity: monospecific for human RUVBL1; see microarray analysis below

Reactivity: human

Stability/Storage: 12 months long term: -20˚C; short term: 4˚C; avoid freeze-thaw cycles; aliquot as required

Handling Notes: small volumes of antibody may occasionally become entrapped in the seal of the product vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container cap.

Tested Research Applications

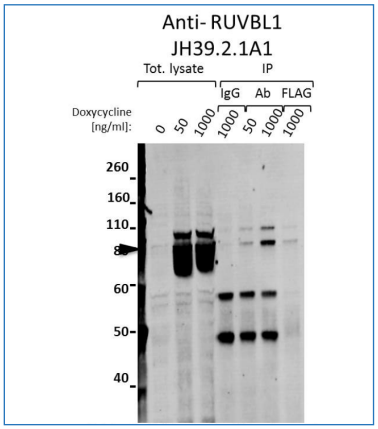
Western Immunoblotting: tested on cells transfected with a construct encoding RUVBL1; utility on native cells under evaluation

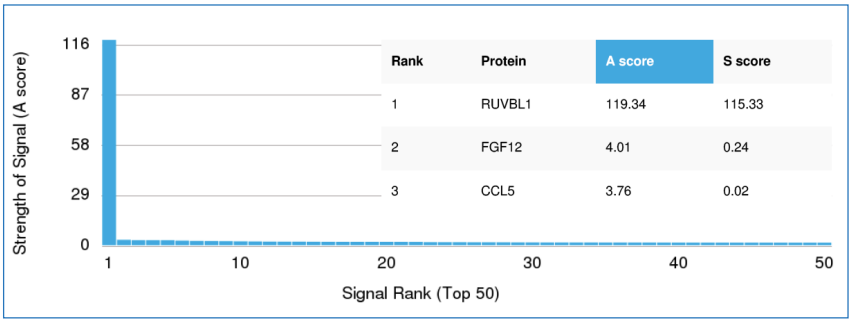
Immunoprecipitation: recommended; see below

ChIP-Seq: recommended; see page 2

Quality Assurance

IP Analysis:
Tot. lysate- Cell lysate using different concentrations of Doxycycline. IgG- Immunoprecipitation of lysate from transfected cells using normal mouse IgG control antibody (SIGMA sc-2025). Ab-Immunoprecipitation of lysate from transfected cells using mAB Anti-RUVBL1 (clone JH39.2.1A1) FLAG- Immunoprecipitation of lysate from transfected cells using FLAG-M2 antibody (SIGMA F1804) *Blotting done with rabbit anti-FLAG from Cell Signaling #2368.





Specificity Analysis with HuProt™ Human Proteome Microarray: Anti Human RUVBL1 (clone JH39.2.1A1) was analyzed using the CDI HuProt™ Human Proteome Microarray.

For more information on A/S scores and how they relate to specificity, see page 2.

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Lot-specific Datasheet version tracker: v2.0.0

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Uniprot / NCBI Summary

Continued from page 1.

Subcellular location: Nucleus matrix. Nucleus › nucleoplasm. Cytoplasm. Membrane. Cytoplasm › cytoskeleton › microtubule organizing center › centrosome.

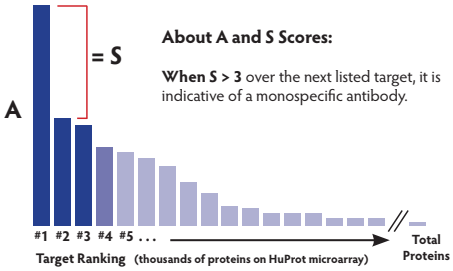
Tissue specificity: Ubiquitously expressed with high expression in heart, skeletal muscle and testis. NOTE High level of autoantibodies against RUVBL1 are detected in sera of patients with autoimmune diseases such as polymyositis/dermatomyositis and autoimmune hepatitis.

General References:

Makino Y, Mimori T, Koike C, Kanemaki M, Kurokawa Y, Inoue S, Kishimoto T, Tamura T-A (1998) TIP49, homologous to the bacterial DNA helicase RuvB, acts as an autoantigen in human. *Biochem Biophys Res Commun* **245**:819-823. [PubMed]

Choudhary C, Kumar C, Gnad F, Nielsen ML, Rehman M, Walther TC, Olsen JV, Mann M (2009) Lysine acetylation targets protein complexes and co-regulates major cellular functions. *Science* **325**:834-840. [PubMed]

Matias PM, Gorynia S, Donner P, Carrondo MA (2006) Crystal structure of the human AAA+ protein RuvBL1. *J Biol Chem* **281**:38918-38929. [PubMed]

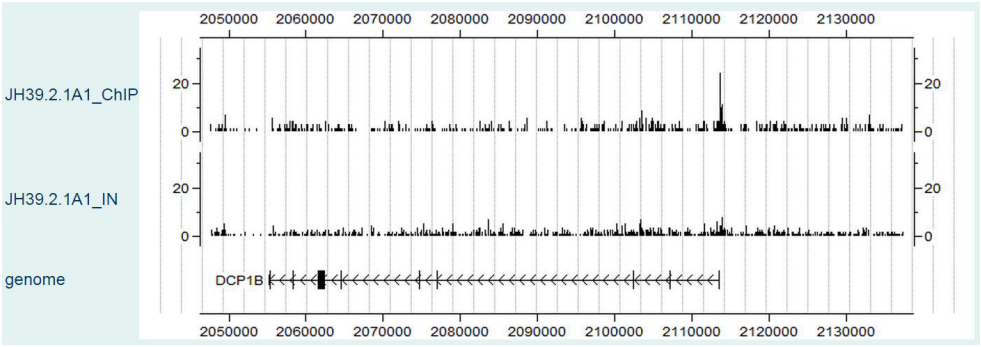


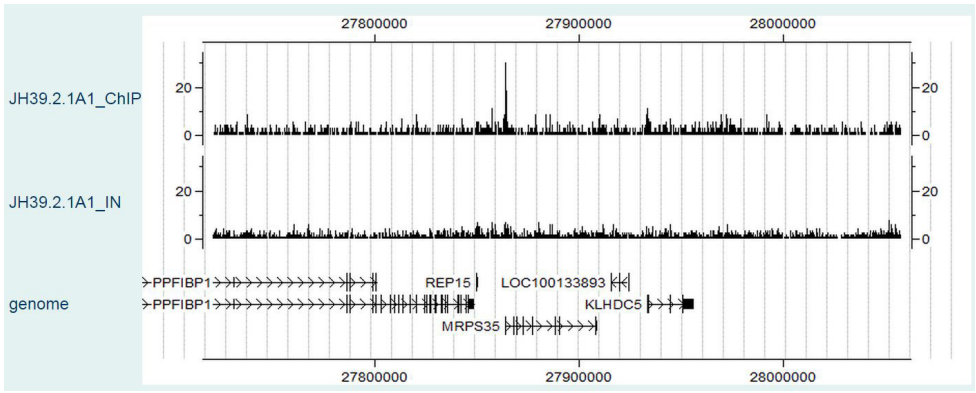
Statistical Analysis: Thousands of GenePix data points (from the microarray) are analyzed in terms of signal strength and ranked accordingly.

SUMMARY: The A-score indicates the number of standard deviations above background seen for the mean signal bound by the target antigen The S-score represents the difference between the A-score of the target antigen and the next best hit on the array. S-scores **greater than 3 standard deviations over the next listed target** are deemed statistically significant and indicate **highly specific antibodies.** More info at cdi-lab.com/HighSpec.html

Tested Research Applications

ChIP-Seq: Recommended





The ChIP was performed with chromatin from 10 million HepG2 cells and 3 µg of Anti-RUVBL1 (cloneID # JH39.2.1A1) antibody. The ChIP DNA was sequenced on an Illumina HiSeq platform and read counts were calculated at consecutive 100 bp bins across the human genome hg19. Normalized read-count levels for ChIP-seq of RUVBL1 (JH39.2.1A1_ChIP) and control (JH39.2.1A1_IN) around the DCP1B and MRPS35 loci are displayed in the CisGenome browser.

The development of this antibody was supported by the National Institutes of Health Protein Capture Reagent Program under award U54HG06434 to CDI Laboratories and Johns Hopkins University.

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