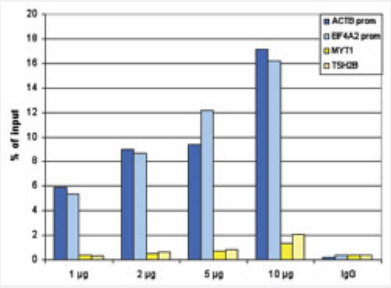
Histone H3 (K27ac) polyclonal antibody

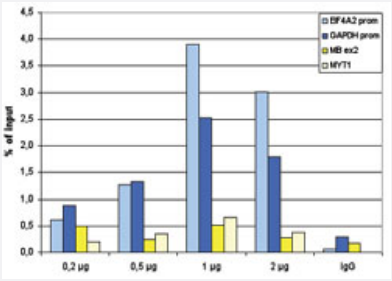
Catalog # PAB31317 Size 50 ug

Applications



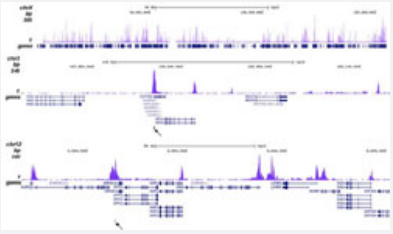
ChIP

ChIP assays were performed using human HeLa cells. A titration consisting of 1, 2, 5 and 10 ug of antibody per ChIP experiment was analyzed. IgG (2 ug/IP) was used as a negative IP control. Quantitative PCR was performed with primers for the promoters of the active EIF4A2 and ACTB genes, used as positive controls, and for the inactive TSH2B and MYT1 genes, used as negative controls.



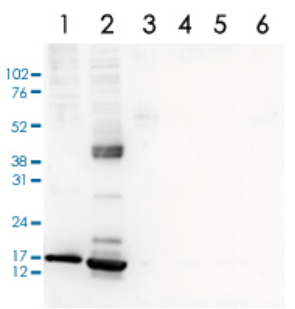
ChIP

ChIP assays were performed using human K562 cells. A titration consisting of 0.2, 0.5, 1 and 2 ug of antibody per ChIP experiment was analyzed. IgG (1 ug/IP) was used as a negative IP control. Quantitative PCR was performed with primers for the promoters of the active GAPDH and EIF4A2 genes, used as positive controls, and for the coding regions of the inactive MB and MYT1 genes, used as negative controls. The figure shows the recovery, expressed as a % of input (the relative amount of immunoprecipitated DNA compared to input DNA after qPCR analysis).



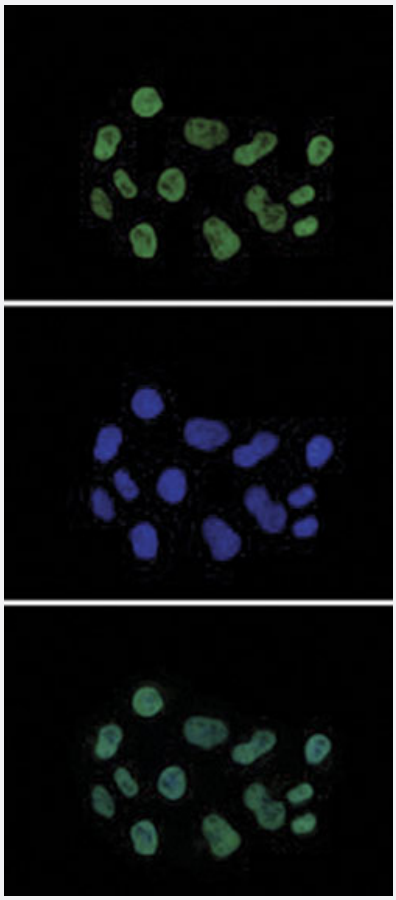
ChIP-Seq

ChIP was performed on sheared chromatin from 100,000 K562 cells using antibody. The figure shows the peak distribution along the complete human X-chromosome and the peak distribution in two regions surrounding the EIF4A2 and GAPDH positive control genes, respectively. The position of the PCR amplicon, used for validating the ChIP assay is indicated with an arrow.



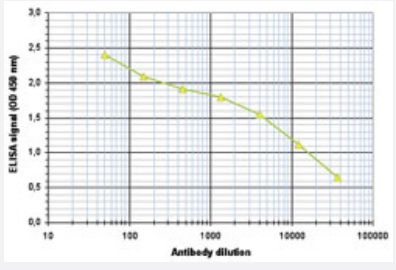
Western Blot

Western Blot analysis of (1) 25 ug whole cell extracts of Hela cells, (2) 15 ug histone extracts of Hela cells, (3) 1 ug of recombinant histone H2A, (4) 1 ug of recombinant histone H2B, (5) 1 ug of recombinant histone H3, (6) 1 ug of recombinant histone H4.



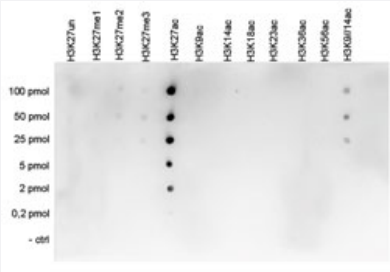
Immunofluorescence

Immunofluorescent staining of Hela cell line with antibody followed by an anti-rabbit antibody conjugated to Alexa488 (top). The middle panel shows staining of the nuclei with DAPI. A merge of the two stainings (bottom).



Enzyme-linked Immunoabsorbent Assay

ELISA is a quantitative method used to determine the titer of the antibody using a serial dilution of antibody against Histone H3 (K27ac). The antigen used was a peptide containing the histone modification of interest. By plotting the absorbance against the antibody dilution, the titer of the antibody was estimated to be 1:8300.



Dot Blot

Cross reactivity test using the Histone H3 (K27ac) antibody.
Dot Blot analysis was performed with peptides containing other histone modifications and the unmodified H3K27. One hundred to 0.2 pmol of the respective peptides were spotted on a membrane. The antibody was used at a dilution of 1:20000. The figure shows a high specificity of the antibody for the modification of interest.

Specification

Product Description	Rabbit polyclonal antibody raised against synthetic peptide of Histone H3 (K27ac).
Immunogen	A synthetic peptide (conjugated with KLH) corresponding to Histone H3, acetylated at lysine 27.
Host	Rabbit
Reactivity	Human, Mouse, Rat, Arabidopsis
Form	Liquid
Purification	Affinity purification
Recommend Usage	ELISA (1:500) Western Blot (1:1000) ChIP (1 ug/IP) Dot Blot (1:20000) Immunofluorescence (1:500) The optimal working dilution should be determined by the end user.
Storage Buffer	In PBS (0.05% sodium azide, 0.05% proclin 300).
Storage Instruction	Store at -20°C. For long term storage store at -80°C. Aliquot to avoid repeated freezing and thawing.
Note	This product contains sodium azide: a POISONOUS AND HAZARDOUS SUBSTANCE which shoul d be handled by trained staff only.

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- ChIP

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Gene Info — HIST1H3A

Entrez GeneID	8350
Protein Accession#	P68431

Gene Name	HIST1H3A
Gene Alias	H3/A, H3FA
Gene Description	histone cluster 1, H3a
Omim ID	602810
Gene Ontology	Hyperlink
Gene Summary	Histones are basic nuclear proteins that are responsible for the nucleosome structure of the chro mosomal fiber in eukaryotes. This structure consists of approximately 146 bp of DNA wrapped ar ound a nucleosome, an octamer composed of pairs of each of the four core histones (H2A, H2B, H3, and H4). The chromatin fiber is further compacted through the interaction of a linker histone, H 1, with the DNA between the nucleosomes to form higher order chromatin structures. This gene is intronless and encodes a member of the histone H3 family. Transcripts from this gene lack polyA t ails; instead, they contain a palindromic termination element. This gene is found in the large histon e gene cluster on chromosome 6p22-p21.3. [provided by RefSeq
Other Designations	H3 histone family, member A|histone 1, H3a

Publication Reference

- Epigenetic dynamics of monocyte-to-macrophage differentiation.

  Wallner S, Schroder C, Leitao E, Berulava T, Haak C, Beiber D, Rahmann S, Richter AS, Manke T, Bonisch U, Arrigoni L, Frohler S, Klironomos F, Chen W, Rajewsky N, Müller F, Ebert P, Lengauer T, Barann M, Rosenstiel P, Gasparoni G, Nordstrom K, Walter J, Brors B, Zipprich G, Felder B, Klein-Hitpass L, Attenberger C, Schmitz G, Horsthemke B.

  Epigenetics & Chromatin 2016 Jul; 9:33.

  Application: ChIP-Seq, Human, Human macrophages, Human monocytes

- Krüppel-like Transcription Factor KLF10 Suppresses TGFβ-Induced Epithelial-to-Mesenchymal Transition via a Negative Feedback Mechanism.

  Mishra VK, Subramaniam M, Kari V, Pitel KS, Baumgart SJ, Naylor RM, Nagarajan S, Wegwitz F, Ellenrieder V, Hawse JR, Johnsen SA.

  Cancer Research 2017 May; 77(9):2387.

  Application: ChIP-Seq, Human, A-549 cells

- c-Myc Antagonises the Transcriptional Activity of the Androgen Receptor in Prostate Cancer Affecting Key Gene Networks.

  Barfeld SJ, Urbanucci A, Itkonen HM, Fazli L, Hicks JL, Thiede B, Rennie PS, Yegnasubramanian S, DeMarzo AM, Mills IG.

  EbioMedicine 2017 Apr; 18:83.

  Application: ChIP, Human, LNCaP cells

- Epigenetically-driven anatomical diversity of synovial fibroblasts guides joint-specific fibroblast functions.

  Frank-Bertoncelj M, Trenkmann M, Klein K, Karouzakis E, Rehrauer H, Bratus A, Kolling C, Armaka M, Filer A, Michel BA, Gay RE, Buckley CD, Kollias G, Gay S, Ospelt C.

  Nature Communications 2017 Mar; 8:14852.

  Application: ChIP-Seq, Human, Human synovial fibroblasts

- RNF40 regulates gene expression in an epigenetic context-dependent manner.

  Xie W, Nagarajan S, Baumgart SJ, Kosinsky RL, Najafova Z, Kari V, Hennion M, Indenbirken D, Bonn S, Grundhoff A, Wegwitz F, Mansouri A, Johnsen SA.

  Genome Biology 2017 Feb; 18(1):32.

  Application: ChIP-Seq, WB-Ce, Mouse, MEFs

- The non-coding variant rs1800734 enhances DCLK3 expression through long-range interaction and promotes colorectal cancer progression.

  Liu NQ, Ter Huurne M, Nguyen LN, Peng T, Wang SY, Studd JB, Joshi O, Ongen H, Bramsen JB, Yan J, Andersen CL, Taipale J, Dermitzakis ET, Houlston RS, Hubner NC, Stunnenberg HG.

  Nature Communications 2017 Feb; 8:14418.

  Application: ChIP-Seq, Human, HCT-116, LoVo cells

- DNA methylation heterogeneity defines a disease spectrum in Ewing sarcoma.

  Sheffield NC, Pierron G, Klughammer J, Datlinger P, Schönegger A, Schuster M, Hadler J, Surdez D, Guillemot D, Lapouble E, Freneaux P, Champigneulle J, Bouvier R, Walder D, Ambros IM, Hutter C, Sorz E, Amaral AT, de Álava E, Schallmoser K, Strunk D, Rinner B, Liegl-Atzwanger B, Huppertz B, Leithner A, de Pinieux G, Terrier P, Laurence V, Michon J, Ladenstein R, Holter W, Windhager R, Dirksen U, Ambros PF, Delattre O, Kovar H, Bock C, Tomazou EM.

  Nature Medicine 2017 Mar; 23(3):386.

  Application: ChIP, Human, Ewing sarcoma tumors

- Rapid Recall Ability of Memory T cells is Encoded in their Epigenome.

  Barski A, Cuddapah S, Kartashov AV, Liu C, Imamichi H, Yang W, Peng W, Lane HC, Zhao K.

  Scientific Reports 2017 Jan; 7:39785.

  Application: ChIP-Seq, Human, Human T cells

- FOXA1 Directs H3K4 Monomethylation at Enhancers via Recruitment of the Methyltransferase MLL3.

  Jozwik KM, Chernukhin I, Serandour AA, Nagarajan S, Carroll JS.

  Cell Reports 2016 Dec; 17(10):2715.

  Application: ChIP-Seq, Human, MCF-7 cells

- Genetic Drivers of Epigenetic and Transcriptional Variation in Human Immune Cells.

  Chen L, Ge B, Casale FP, Vasquez L, Kwan T, Garrido-Martín D, Watt S, Yan Y, Kundu K, Ecker S, Datta A, Richardson D, Burden F, Mead D, Mann AL, Fernandez JM, Rowlston S, Wilder SP, Farrow S, Shao X, Lambourne JJ, Redensek A, Albers CA, Amstislavskiy V, Ashford S, Berentsen K, Bomba L, Bourque G, Bujold D, Busche S, Caron M, Chen SH, Cheung W, Delaneau O, Dermitzakis ET, Elding H, Colgiu I, Bagger FO, Flicek P, Habibi E, Iotchkova V, Janssen-Megens E, Kim B, Lehrach H, Lowy E, Mandoli A, Matares

  Cell 2016 Nov; 167(5):1398.

  Application: ChIP-Seq, Human, Monocytes, Neutrophils, T cells

- β-Glucan Reverses the Epigenetic State of LPS-Induced Immunological Tolerance.

  Novakovic B, Habibi E, Wang SY, Arts RJ, Davar R, Megchelenbrink W, Kim B, Kuznetsova T, Kox M, Zwaag J, Matarese F, van Heeringen SJ, Janssen-Megens EM, Sharifi N, Wang C, Keramati F, Schoonenberg V, Flicek P, Clarke L, Pickkers P, Heath S, Gut I, Netea MG, Martens JH, Logie C, Stunnenberg HG.

  Cell 2016 Nov; 167(5):1354.

  Application: ChIP, Human, Monocytes

- The Hematopoietic Transcription Factors RUNX1 and ERG Prevent AML1-ETO Oncogene Overexpression and Onset of the Apoptosis Program in t(8;21) AMLs.

  Mandoli A, Singh AA, Prange KH, Tijchon E, Oerlemans M, Dirks R, Ter Huurne M, Wierenga AT, Janssen-Megens EM, Berentsen K, Sharifi N, Kim B, Matarese F, Nguyen LN, Hubner NC, Rao NA, van den Akker E, Altucci L, Vellenga E, Stunnenberg HG, Martens JH.

  Cell Reports 2016 Nov; 17(8):2087.

  Application: ChIP-Seq, Human, Kasumi-1 cells

- Neonatal monocytes exhibit a unique histone modification landscape.

  Bermick JR, Lambrecht NJ, denDekker AD, Kunkel SL, Lukacs NW, Hogaboam CM, Schaller MA.

  Clinical Epigenetics 2016 Sep; 8:99.

  Application: ChIP-Seq, Human, Human mononuclear cells

- BRD4 localization to lineage-specific enhancers is associated with a distinct transcription factor repertoire.

  Zeynab Najafova, Roberto Tirado-Magallanes, Malayannan Subramaniam, Tareq Hossan, Geske Schmidt, Sankari Nagarajan, Simon J Baumgart, Vivek Kumar Mishra, Upasana Bedi, Eric Hesse, Stefan Knapp, John R Hawse, Steven A Johnsen.

  Nucleic Acids Research 2017 Jan; 45(1):127.

  Application: ChIP-Seq, Human, Human osteoblast cells

- reChIP-seq reveals widespread bivalency of H3K4me3 and H3K27me3 in CD4(+) memory T cells.

  Kinkley S, Helmuth J, Polansky JK, Dunkel I, Gasparoni G, Fröhler S, Chen W, Walter J, Hamann A, Chung HR.

  Nature Communications 2016 Aug; 7:12514.

  Application: ChIP, Re-ChIP, Human, CD4+ central memory Tcells

- Chromatin accessibility maps of chronic lymphocytic leukaemia identify subtype-specific epigenome signatures and transcription regulatory networks.

  Rendeiro AF, Schmidl C, Strefford JC, Walewska R, Davis Z, Farlik M, Oscier D, Bock C.

  Nature Communications 2016 Jun; 7:11938.

  Application: ChIP, Human, GM12878, JVM-2, KARPAS-422, SU-DHL-5 cells

- Comprehensive genome and epigenome characterization of CHO cells in response to evolutionary pressures and over time.

  Feichtinger J, Hernández I, Fischer C, Hanscho M, Auer N, Hackl M, Jadhav V, Baumann M, Krempl PM, Schmidl C, Farlik M, Schuster M, Merkel A, Sommer A, Heath S, Rico D, Bock C, Thallinger GG, Borth N.

  Biotechnology and Bioengineering 2016 Oct; 113(10):2241.

  Application: ChIP, Mouse, PF-MCB cells

- ArrayNinja: An Open Source Platform for Unified Planning and Analysis of Microarray Experiments.

  Dickson BM, Cornett EM, Ramjan Z, Rothbart SB.

  Methods in Enzymology 2016 Mar; 574:53.

  Application: Array, Array

- MLL-Rearranged Acute Lymphoblastic Leukemias Activate BCL-2 through H3K79 Methylation and Are Sensitive to the BCL-2-Specific Antagonist ABT-199.

  Benito JM, Godfrey L, Kojima K, Hogdal L, Wunderlich M, Geng H, Marzo I, Harutyunyan KG, Golfman L, North P, Kerry J, Ballabio E, Chonghaile TN, Gonzalo O, Qiu Y, Jeremias I, Debose L, O'Brien E, Ma H, Zhou P, Jacamo R, Park E, Coombes KR, Zhang N, Thomas DA, O'Brien S, Kantarjian HM, Leverson JD, Kornblau SM, Andreeff M, Müschen M, Zweidler-McKay PA, Mulloy JC, Letai A, Milne TA, Konopleva M.

  Cell Reports 2015 Dec; 13(12):2715.

  Application: ChIP, ChIP-Seq, Human, SEM cells

- Glucocorticoid receptor and nuclear factor kappa-b affect three-dimensional chromatin organization.

  Kuznetsova T, Wang SY, Rao NA, Mandoli A, Martens JH, Rother N, Aartse A, Groh L, Janssen-Megens EM, Li G, Ruan Y, Logie C, Stunnenberg HG.

  Genome Biology 2015 Dec; 16:264.

  Application: ChIP-Seq, Human, HeLa cells

- Cell-Cycle-Dependent Reconfiguration of the DNA Methylome during Terminal Differentiation of Human B Cells into Plasma Cells.

  Caron G, Hussein M, Kulis M, Delaloy C, Chatonnet F, Pignarre A, Avner S, Lemarié M, Mahé EA, Verdaguer-Dot N, Queirós AC, Tarte K, Martín-Subero JI, Salbert G, Fest T.

  Cell Reports 2015 Nov; 13(5):1059.

  Application: ChIP-Seq, Human, Human naive B cells

- Non-coding recurrent mutations in chronic lymphocytic leukaemia.

  Puente XS, Beà S, Valdés-Mas R, Villamor N, Gutiérrez-Abril J, Martín-Subero JI, Munar M, Rubio-Pérez C, Jares P, Aymerich M, Baumann T, Beekman R, Belver L, Carrio A, Castellano G, Clot G, Colado E, Colomer D, Costa D, Delgado J, Enjuanes A, Estivill X, Ferrando AA, Gelpí JL, González B, González S, González M, Gut M, Hernández-Rivas JM, López-Guerra M, Martín-García D, Navarro A, Nicolás P, Orozco M, Payer ÁR, Pinyol M, Pisano DG, Puente DA, Queirós AC, Quesada V, Romeo-Casabona CM, Royo C, Ro

  Nature 2015 Oct; 526(7574):519.

- Epigenome mapping reveals distinct modes of gene regulation and widespread enhancer reprogramming by the oncogenic fusion protein EWS-FLI1.

  Eleni M Tomazou, Nathan C Sheffield, Christian Schmidl, Michael Schuster, Andreas Schonegger, Paul Datlinger, Stefan Kubicek, Christoph Bock, Heinrich Kovar.

  Cell Reports 2015 Feb; 10(7):1082.

  Application: ChIP-Seq, WB-Ce, Human, A673, SK-N-MC, STA-ET-7.2 cells

- Genome-wide and single-cell analyses reveal a context dependent relationship between CBP recruitment and gene expression.

  Kasper LH, Qu C, Obenauer JC, McGoldrick DJ, Brindle PK.

  Nucleic Acids Research 2014 Oct; 42(18):11363.

  Application: WB-Tr, Mouse, MEFs

Pathway

- Systemic lupus erythematosus