abcam

ab170933

Anti-FOXA1 + FOXA2 + FOXA3 antibody [EPR10881]

Anti-FOXA1 + FOXA2 + FOXA3 antibody [EPR10881] (ab170933) is a rabbit monoclonal antibody detecting FOXA1 + FOXA2 + FOXA3 in **Western Blot, Flow Cytometry (Intra), IHC-P, ICC/IF**. Suitable for **Human, Mouse, Rat**.

- Biophysical QC for unrivalled batch-batch consistency
- Over 30 publications

Recombinant | RabMAb | Advanced Validation | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR10881
Purification technique	Affinity purification Protein A
Concentration	1.202 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse

Dilution info	1/1000
Notes	**For unpurified use 1/100 - 1/250** Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/1000
Notes	**For unpurified use 1/100 - 1/250** Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Human
Dilution info	1/1000
Notes	**For unpurified use 1/100 - 1/250** Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

ChIP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000 - 1/10000
Notes	-

Species	Rat
Dilution info	1/1000 - 1/10000
Notes	-

Species	Human
Dilution info	1/1000 - 1/10000

Notes	-

ChIC/CUT&RUN-seq

Tested

Species	Human
Dilution info	5 µg
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100 - 1/250
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information FOXA1

Function	Transcription factor that is involved in embryonic development, establishment of tissue-specific gene expression and regulation of gene expression in differentiated tissues. Is thought to act as a 'pioneer' factor opening the compacted chromatin for other proteins through interactions with nucleosomal core histones and thereby replacing linker histones at target enhancer and/or promoter sites. Binds DNA with the consensus sequence 5'-[AC]A[AT]T[AG]TT[GT][AG][CT]T[CT]-3' (By similarity). Proposed to play a role in translating the epigenetic signatures into cell type-specific enhancer-driven transcriptional programs. Its differential recruitment to chromatin is dependent on distribution of histone H3 methylated at 'Lys-5' (H3K4me2) in estrogen-regulated genes. Involved in the development of multiple endoderm-derived organ systems such as liver, pancreas, lung and prostate; FOXA1 and FOXA2 seem to have at least in part redundant roles (By similarity). Modulates the transcriptional activity of nuclear hormone receptors. Is involved in ESR1-mediated transcription; required for ESR1 binding to the NKX2-1 promoter in breast cancer cells; binds to the RPRM promoter and is required for the estrogen-induced repression of RPRM. Involved in regulation of apoptosis by inhibiting the expression of BCL2. Involved in cell cycle regulation by activating expression of CDKN1B, alone or in conjunction with BRCA1. Originally described as a transcription activator for a number of liver genes such as AFP, albumin, tyrosine aminotransferase, PEPCK, etc. Interacts with the cis-acting regulatory regions of these genes. Involved in glucose homeostasis.

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot

Storage information	Avoid freeze / thaw cycle

Notes

What is this antibody validated in?
Anti-FOXA1 + FOXA2 + FOXA3 antibody [EPR10881] (ab170933) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse, Rat samples.

What is the molecular weight of FOXA1?
Anti-FOXA1 + FOXA2 + FOXA3 [EPR10881] (ab170933) detects a band for FOXA1 (UniProt: P55317) at a molecular weight of 49kDa.

Trusted by the scientific community
Anti-FOXA1 + FOXA2 + FOXA3 [EPR10881] (ab170933) was first used in a scientific publication in 2013 and has been cited over 30 times in peer-reviewed journals.

Other related products
We have a range of other formats of antibody clone [EPR10881] also available for your convenience: ab170933, Alexa Fluor® 647 - ab196908, Alexa Fluor® 488 - ab197235, Carrier free - ab236011

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	FOXA1 also known as Forkhead Box A1 is a transcription factor with a molecular weight of about 49 kDa. It plays a role by binding to specific DNA sequences influencing the expression of genes involved in various cellular processes. This protein is expressed in tissues like liver lungs and prostate. Researchers also refer to FOXA1 as HNF-3α emphasizing its importance in transcription regulation.

Biological function summary	FOXA1 influences the transcriptional control of genes essential for organ development and metabolic regulation. It acts as a pioneer factor opening chromatin structure to enable access for other transcription factors. FOXA1 integrates into complexes that involve histone modification affecting the chromatin state and transcription of target genes. This function is necessary for the proper differentiation and function of several tissues.
Pathways	FOXA1 participates significantly in the androgen receptor signaling pathway and the estrogen receptor signaling pathway. It interacts closely with androgen receptor facilitating the expression of genes that influence cell growth and proliferation. The involvement of FOXA1 in these pathways highlights its critical role in pathways that regulate hormone-responsive cancers and metabolic processes.
Associated diseases and disorders	FOXA1 shows a strong association with cancers such as prostate cancer and breast cancer. FOXA1's interaction with the androgen receptor links it to prostate cancer progression while its involvement with the estrogen receptor correlates with breast cancer development. Aberrations in its expression or function can disrupt these pathways emphasizing the importance of FOXA1 in cancer biology and its potential as a therapeutic target.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

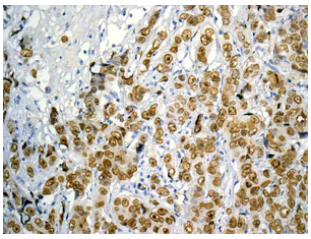
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

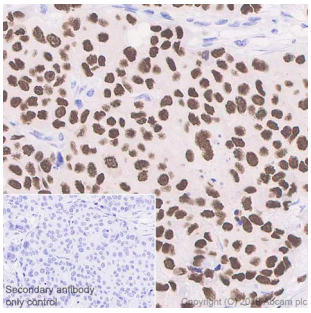
15 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-FOXA1 + FOXA2 + FOXA3 antibody [EPR10881] (ab170933)

FOXA1 + FOXA2 + FOXA3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-FOXA1 + FOXA2 + FOXA3 antibody

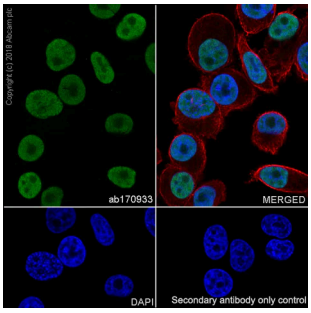
Immunohistochemical analysis of paraffin-embedded Human breast carcinoma tissue labeling FOXA1 with unpurified ab170933 at 1/100 dilution. Heat mediated antigen retrieval was performed using citrate buffer pH 6.0 before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-FOXA1 + FOXA2 + FOXA3 antibody [EPR10881] (ab170933)

FOXA1 + FOXA2 + FOXA3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-FOXA1 + FOXA2 + FOXA3 antibody

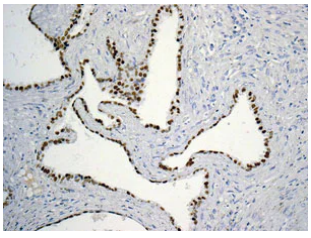
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human breast cancer tissue sections labeling FOXA1 with Purified ab170933 at 1:1000 dilution (1.13 µg/ml). Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer, pH 9.0) ImmunoHistoProbe one step HRP Polymer (ready to use)was used as the secondary antibody.Negative control:PBS instead of the primary antibody.Hematoxylinwas used as a counterstain.



Immunocytochemistry/ Immunofluorescence - Anti-FOXA1 + FOXA2 + FOXA3 antibody [EPR10881] (ab170933)

FOXA1 + FOXA2 + FOXA3 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-FOXA1 + FOXA2 + FOXA3 antibody

Immunocytochemistry/ Immunofluorescence analysis of PC-3 (Human prostate adenocarcinoma epithelial cell) cells labeling FOXA1 with Purified ab170933 at 1:100 dilution (11 µg/ml). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor®594) 1:200 (2.5 µg/ml). Goat anti rabbit IgG (Alexa Fluor®488, ab150077) was used as the secondary antibody at 1:1000 (2 µg/ml) dilution. DAPI nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.

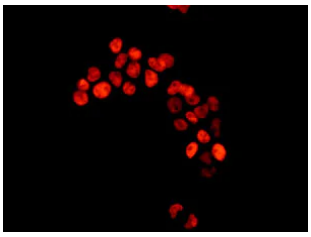


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-FOXA1 + FOXA2 + FOXA3 antibody [EPR10881] (ab170933)

FOXA1 + FOXA2 + FOXA3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-FOXA1 + FOXA2 + FOXA3 antibody

Immunohistochemical analysis of paraffin-embedded Human prostate tissue labeling FOXA1 with unpurified ab170933 at 1/100 dilution. Heat mediated antigen retrieval was performed using

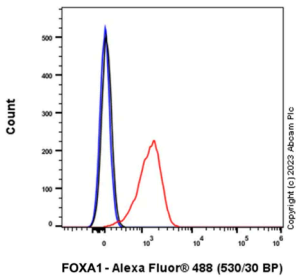
citrate buffer pH 6.0 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-FOXA1 + FOXA2 + FOXA3 antibody [EPR10881] (ab170933)

FOXA1 + FOXA2 + FOXA3 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-FOXA1 + FOXA2 + FOXA3 antibody

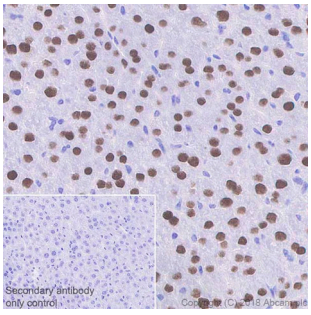
Immunofluorescence analysis of HepG2 cells labeling FOXA1 with unpurified ab170933 at 1/100 dilution.



Flow Cytometry (Intracellular) - Anti-FOXA1 + FOXA2 + FOXA3 antibody [EPR10881] (ab170933)

FOXA1 + FOXA2 + FOXA3 Flow Cytometry (Intracellular) staining of PC-3 (human prostate adenocarcinoma epithelial cell) cells using rabbit Anti-FOXA1 + FOXA2 + FOXA3 antibody

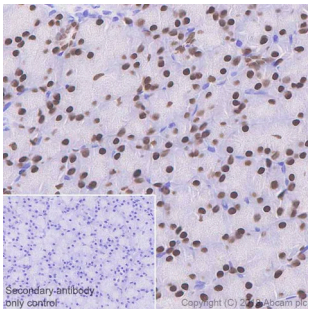
Intracellular Flow Cytometry analysis of PC-3 (human prostate adenocarcinoma epithelial cell) cells labeling FOXA1 with purified ab170933 at 1/50 dilution (1 ug/ml) (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150081) (1/5000 dilution) was used as the secondary antibody. Rabbit monoclonal IgG (Black) was used as the isotype control, cells without incubation with primary antibody and secondary antibody (Blue) were used as the unlabeled control.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-FOXA1 + FOXA2 + FOXA3 antibody [EPR10881] (ab170933)

FOXA1 + FOXA2 + FOXA3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-FOXA1 + FOXA2 + FOXA3 antibody

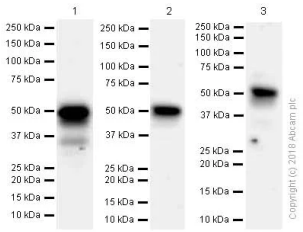
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Mouse liver tissue sections labeling FOXA1 with Purified ab170933 at 1:1000 dilution (1.13 µg/ml). Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer, pH 9.0) ImmunoHistoProbe one step HRP Polymer (ready to use)was used as the secondary antibody.Negative control:PBS instead of the primary antibody.Hematoxylinwas used as a counterstain



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-FOXA1 + FOXA2 + FOXA3 antibody [EPR10881] (ab170933)

FOXA1 + FOXA2 + FOXA3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-FOXA1 + FOXA2 + FOXA3 antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Rat pancreas tissue sections labeling FOXA1 with Purified ab170933 at 1:1000 dilution (1.13 µg/ml). Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer, pH 9.0) ImmunoHistoProbe one step HRP Polymer (ready to use)was used as the secondary antibody.Negative control:PBS instead of the primary antibody.Hematoxylinwas used as a counterstain



Western blot - Anti-FOXA1 + FOXA2 + FOXA3 antibody [EPR10881] (ab170933)

FOXA1 + FOXA2 + FOXA3 Western blot staining using rabbit Anti-FOXA1 + FOXA2 + FOXA3 antibody

Blocking and diluting buffer: 5% NFDM/TBST.

All lanes:
Western blot - Anti-FOXA1 + FOXA2 + FOXA3 antibody [EPR10881] (ab170933) at 1.1 µg/mL

Lane 1:
SW480 (Human colorectal adenocarcinoma epithelial cell) whole cell lysates at 15 µg

Lane 2:
Mouse lung lysates at 15 µg

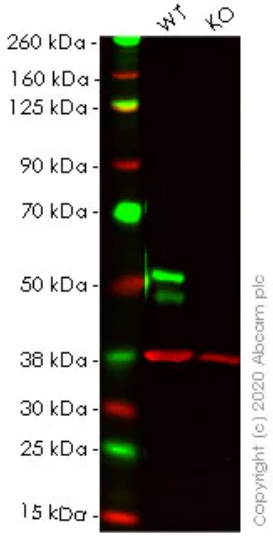
Lane 3:
Rat lung lysates at 15 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 49 kDa

Observed band size: 49 kDa



Western blot - Anti-FOXA1 + FOXA2 + FOXA3 antibody [EPR10881] (ab170933)

FOXA1 + FOXA2 + FOXA3 Western blot staining using rabbit Anti-FOXA1 + FOXA2 + FOXA3 antibody

Lanes 1- 2: Merged signal (red and green). Green - ab170933 observed at 52 kDa. Red - Anti-GAPDH antibody [6C5] - Loading Control (ab8245) observed at 37 kDa.
ab170933 was shown to react with FOXA1 in wild-type HeLa cells in western blot. Loss of signal was observed when knockout cell line ab261823 (knockout cell lysate ab256920) was used. Wild-type HeLa and FOXA1 knockout HeLa cell lysates were subjected to SDS-PAGE. Membrane was blocked for 1 hour at room temperature in 0.1% TBST with 3% non-fat dried milk. ab170933 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) overnight at 4°C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye®800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye®680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

Hela cells are predicted to express FOXA1, not FOXA2 and FOXA3

All lanes:
Western blot - Anti-FOXA1 + FOXA2 + FOXA3 antibody [EPR10881] (ab170933) at 1/1000 dilution

Lane 1:
Wild-type HeLa cell lysate at 20 µg

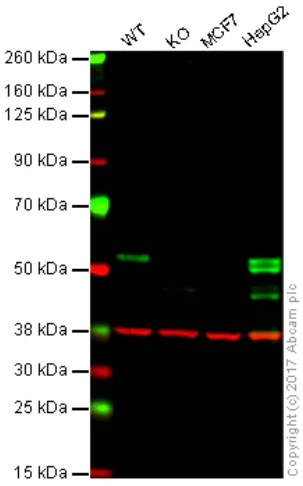
Lane 2:
FOXA1 knockout HeLa cell lysate at 20 µg

Lane 2:
Western blot - Human FOXA1 knockout HeLa cell line (ab261823)

Performed under reducing conditions.

Predicted band size: 49 kDa

Observed band size: 52 kDa



Western blot - Anti-FOXA1 + FOXA2 + FOXA3 antibody [EPR10881] (ab170933)

FOXA1 + FOXA2 + FOXA3 Western blot staining using rabbit Anti-FOXA1 + FOXA2 + FOXA3 antibody

Lanes 1 - 4: Merged signal (red and green). Green - ab170933 observed at 52 kDa. Red - loading control, ab9484, observed at 37 kDa.
Unpurified ab170933 was shown to specifically react with FOXA1 in wild-type HAP1 cells as signal was lost in FOXA1 knockout cells. Wild-type and FOXA1 knockout samples were subjected to SDS-PAGE. ab170933 and ab9484 (Mouse anti-GAPDH loading control) were incubated overnight at 4°C at 1/1000 dilution and 1/20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed ab216773 and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed ab216776 secondary antibodies at 1/10000 dilution for 1 hour at room temperature before imaging.

HAP1 cells are predicted to express FOXA1, not FOXA2 and FOXA3

All lanes:
Western blot - Anti-FOXA1 + FOXA2 + FOXA3 antibody [EPR10881] (ab170933) at 1/1000 dilution

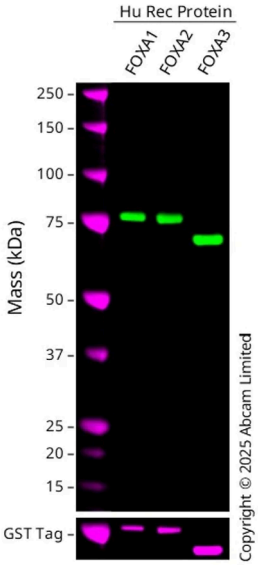
Lane 1:
Wild-type HAP1 whole cell lysate at 20 µg

Lane 2:
FOXA1 knockout HAP1 whole cell lysate at 20 µg

Lane 3:
MCF7 whole cell lysate at 20 µg

Lane 4:
HepG2 whole cell lysate at 20 µg

Predicted band size: 49 kDa



Western blot - Anti-FOXA1 + FOXA2 + FOXA3 antibody [EPR10881] (ab170933)

FOXA1 + FOXA2 + FOXA3 Western blot staining using rabbit Anti-FOXA1 + FOXA2 + FOXA3 antibody

Western blot: Anti-FOXA1 antibody [EPR10881] ab170933 staining at 1/1000 dilution, shown in green; Mouse anti GST ab92 loading control staining at 1/1000 dilution, shown in magenta. A band was observed at 76 kDa. To generate this image, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3pc Milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit 800CW and Goat anti-Mouse 680RD at 1/20,000 dilution.
All lanes:
Western blot - Anti-FOXA1 + FOXA2 + FOXA3 antibody [EPR10881] (ab170933) at 1/1000 dilution

Lane 1:

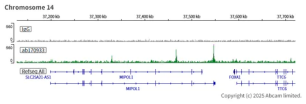
FOXA1 Human Recombinant Protein with GST-tag at N terminus at 0.1 µg

Lane 2:
FOXA2 Human Recombinant Protein with GST-tag at N terminus at 0.1 µg

Lane 3:
FOXA3 Human Recombinant Protein with GST-tag at N terminus at 0.1 µg

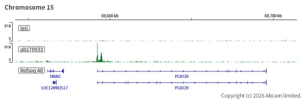
Predicted band size: 49 kDa

Observed band size: 76 kDa, 63 kDa



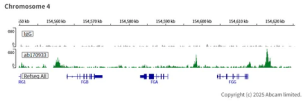
ChIC/CUT&RUN sequencing - Anti-FOXA1 + FOXA2 + FOXA3 antibody [EPR10881] (ab170933)

ChIC/CUT&RUN was performed using a pAG-MNase at a final concentration of 700 ng/mL, 2.5 x 10^5 HepG2 (human hepatocellular carcinoma epithelial cell) cells and 5 µg of ab170933 [EPR10881]. The resulting DNA was sequenced on the Illumina NovaSeq 6000 to a depth of 10 million reads. The negative IgG control ab172730 is also shown. The University of Geneva owns patents relevant to ChIC (Chromatin Immuno-Cleavage) methods.



ChIC/CUT&RUN sequencing - Anti-FOXA1 + FOXA2 + FOXA3 antibody [EPR10881] (ab170933)

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