abcam

ab55178

Anti-FOXA1 + FOXA2 + FOXA3 antibody [1B1]

Key facts

Isotype	IgG2a
Host species	Mouse
Storage buffer	pH: 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Fragment Protein within Human FOXA1 aa 350-500. The exact immunogen used to generate this antibody is proprietary information. Database link P55317
Carrier free	Yes
Clone number	1B1
Purification technique	Affinity purification Protein A
Light chain type	kappa
Concentration	0.4 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified from TCS.

Reactivity data

Flow Cyt

Tested

Species	Human

Dilution info	-
Notes	ab170191 - Mouse monoclonal IgG2a, is suitable for use as an isotype control with this antibody.

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

WB

Tested

Species	Human, Recombinant fragment - Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human

Dilution info	-
Notes	-

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
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	Blue Ice
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

This product was changed from ascites to tissue culture supernatant on 24/1/19. Please note that the dilutions may need to be adjusted accordingly. If you have any questions, please do not hesitate to contact our scientific support team.

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.

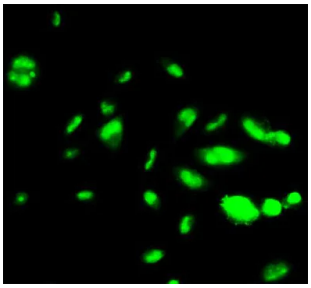
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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:
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6 product images

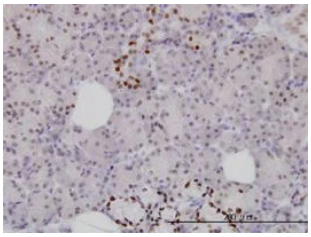


Immunocytochemistry/ Immunofluorescence - Anti-FOXA1 + FOXA2 + FOXA3 antibody [1B1] (ab55178)

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

ab55178 at 10 ug/ml staining FOXA1 in human HepG2 cells by Immunocytochemistry/ Immunofluorescence.

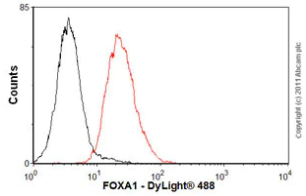
This image was generated using the ascites version of the product.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-FOXA1 + FOXA2 + FOXA3 antibody [1B1] (ab55178)

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

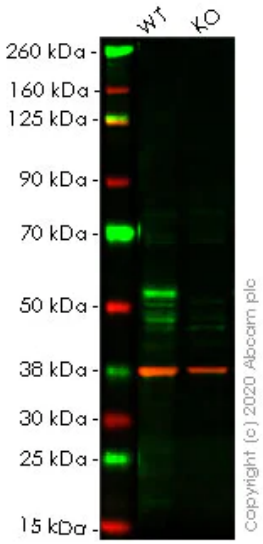
FOXA1 antibody (ab55178) used in immunohistochemistry at 3ug/ml on formalin fixed and paraffin embedded human salivary gland.
This image was generated using the ascites version of the product.



Flow Cytometry - Anti-FOXA1 + FOXA2 + FOXA3 antibody [1B1] (ab55178)

FOXA1 + FOXA2 + FOXA3 Flow Cytometry staining using mouse Anti-FOXA1 + FOXA2 + FOXA3 antibody

Overlay histogram showing HepG2 cells stained with ab55178 (red line). The cells were fixed with 4 % paraformaldehyde (10 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab55178, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG2a [ICIGG2A] (ab91361, 1µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed.
This image was generated using the ascites version of the product.



Western blot - Anti-FOXA1 + FOXA2 + FOXA3 antibody [1B1] (ab55178)

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

Lanes 1- 2: Merged signal (red and green). Green - ab55178 observed at 49 kDa. Red - Anti-GAPDH antibody[EPR16891] - Loading Control (ab181602) observed at 37 kDa.
ab55178 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. ab55178 and Anti-GAPDH antibody[EPR16891] - Loading Control (ab181602) overnight at 4°C at a 1 in 500 dilution and a 1 in 20000 dilution respectively. Blots were developed with Goat anti-Mouse IgG H&L (IRDye®800CW) preadsorbed (ab216772) and Goat Anti-Rabbit IgG H&L (IRDye®680RD) preadsorbed (ab216777) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

HeLa cells are predicted to express FOXA1, with no expression of FOXA2 or FOXA3.
All lanes:
Western blot - Anti-FOXA1 + FOXA2 + FOXA3 antibody [1B1] (ab55178) at 1/500 dilution

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

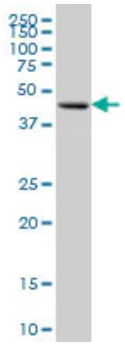
Lane 2:
FOXA1 knockout HeLa cell lysate at 20 µg

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

Performed under reducing conditions.

Predicted band size: 49 kDa

Observed band size: 49 kDa



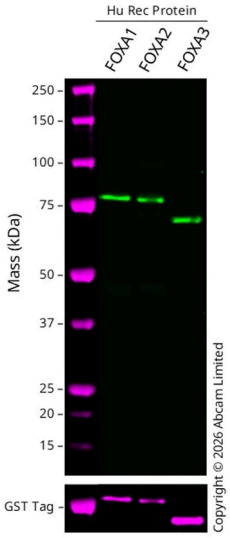
Western blot - Anti-FOXA1 + FOXA2 + FOXA3 antibody [1B1] (ab55178)

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

FOXA1 antibody (ab55178) at 1ug/lane + HepG2 cell lysate at 25ug/lane.
This image was generated using the ascites version of the product.

All lanes:
Western blot - Anti-FOXA1 + FOXA2 + FOXA3 antibody [1B1] (ab55178)

Predicted band size: 49 kDa



Western blot - Anti-FOXA1 + FOXA2 + FOXA3 antibody [1B1] (ab55178)

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

Western blot: Anti-FOXA1 + FOXA2 + FOXA3 antibody [1B1] ab55178 staining at 1/500 dilution, shown in green; Rabbit anti GST (ab111947) loading control staining at 1/200 dilution, shown in magenta. 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-Mouse 800CW & Goat anti-Rabbit 680RD at 1/20,000 dilution.
All lanes:
Western blot - Anti-FOXA1 + FOXA2 + FOXA3 antibody [1B1] (ab55178) at 1/500 dilution

Lane 1:
FOXA1 Recombinant Protein at 0.1 µg

Lane 2:
FOXA2 Recombinant Protein at 0.1 µg

Lane 3:
FOXA3 Recombinant Protein at 0.1 µg

Secondary

All lanes:
Goat anti-Mouse 800CW & Goat anti-Rabbit 680RD at 1/20000 dilution

Predicted band size: 52 kDa, 50 kDa, 37 kDa

Observed band size: 78 kDa, 76 kDa, 63 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.