abcam

ab184665

Anti-Oct4 antibody [GT486]

Anti-Oct4 antibody [GT486] (ab184665) is a mouse monoclonal antibody detecting Oct4 in **Western Blot, Flow Cytometry, IP, IHC-P, ICC/IF**. Suitable for **Human, Mouse**.

- Over 30 publications

Key facts

Isotype	IgG2b
Host species	Mouse
Storage buffer	pH: 7 Constituents: PBS, 20% Glycerol (glycerin, glycerine)
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Fragment Protein within Human POU5F1 aa 1-200. The exact immunogen used to generate this antibody is proprietary information. Database link Q01860
Clone number	GT486
Purification technique	Affinity purification Protein G
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified from TCS

Reactivity data

IP

Tested

Species	Human

Dilution info	1/100 - 1/500
Notes	-

Expected

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

Predicted

Species	Chimpanzee
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1/50
Notes	ab170192 - Mouse monoclonal IgG2b, is suitable for use as an isotype control with this antibody.

Expected

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

Predicted

Species	Chimpanzee
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/500 - 1/3000
Notes	-

Species	Human
Dilution info	1/500 - 1/3000
Notes	-

Predicted

Species	Chimpanzee
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/100 - 1/1000
Notes	-

Expected

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

Predicted

Species	Chimpanzee
Dilution info	-

Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100 - 1/1000
Notes	-

Expected

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

Predicted

Species	Chimpanzee
Dilution info	-
Notes	-

Target data

See full target information POU5F1

Function	Transcription factor that binds to the octamer motif (5'-ATTTGCAT-3'). Forms a trimeric complex with SOX2 or SOX15 on DNA and controls the expression of a number of genes involved in embryonic development such as YES1, FGF4, UTF1 and ZFP206. Critical for early embryogenesis and for embryonic stem cell pluripotency.

Storage

Shipped at conditions	Blue Ice
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-Oct4 antibody [GT486] (ab184665) is a mouse monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Flow Cyt), Immunoprecipitation (IP), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse samples.

What is the molecular weight of Oct4?
Anti-Oct4 [GT486] (ab184665) specifically detects a band for Oct4 (UniProt: Q01860) at a molecular weight of 39kDa.

Trusted by the scientific community
Anti-Oct4 [GT486] (ab184665) was first used in a scientific publication in 2014 and has been cited over 30 times in peer-reviewed journals.

Supplementary info

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

Activity summary	Oct4 also known as POU5F1 Oct 4 protein and hecho en Oct 4 is a transcription factor important for maintaining pluripotency in stem cells. Oct4 protein has a molecular weight of approximately 40-45 kDa. Stem and germ cells express Oct4 where it regulates gene expression essential for cell differentiation and self-renewal. In immunohistochemistry (IHC) studies scientists often use Oct4 staining to identify stem cell presence and behavior.
Biological function summary	Oct4 acts in concert with other pluripotency factors like SOX2 and NANOG to form a regulatory network essential for maintaining stem cell identity. As part of this network the Oct4 transcription factor orchestrates the expression of genes that prevent differentiation and maintain the stem cell's undifferentiated state. The protein directly activates the transcription of target genes involved in maintaining the pluripotent state.
Pathways	Oct4 plays an important role in the maintenance of pluripotency and self-renewal in the embryonic stem cell (ESC) and induced pluripotent stem cell (iPSC) pathways. Oct4 partners with proteins such as SOX2 and KLF4 in these pathways to activate and repress a common set of downstream genes which control differentiation and proliferation. Oct4 ensures the blocking of differentiation signals while promoting self-renewal in pluripotent cells.

Associated diseases and disorders	Aberrant Oct4 expression often links to oncogenesis and tumor progression particularly in testicular germ cell tumors and certain types of cancers. Oct4 overexpression may interact with c-MYC a protein linked to cancer cell proliferation advancing tumorigenesis. Additionally researchers investigate Oct4 as a diagnostic marker for cancer and its potential as a therapeutic target to inhibit cancer cell growth.

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

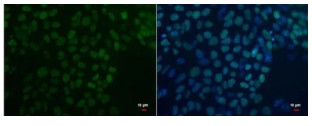
We do not recommend this combination. It is not covered by our product promise.

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.

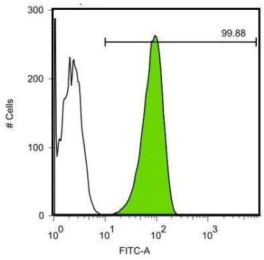
4 product images



Immunocytochemistry/ Immunofluorescence - Anti-Oct4 antibody [GT486] (ab184665)

Oct4 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Oct4 antibody

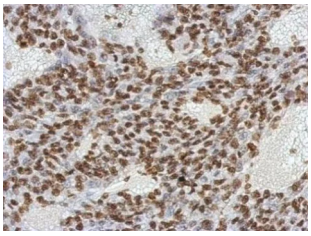
Immunofluorescence analysis of 4% paraformaldehyde-fixed Human embryonic stem cells labeling Oct4 with ab184665 at 1/200 dilution (green). Hoechst 33342 staining is shown in blue.



Flow Cytometry - Anti-Oct4 antibody [GT486] (ab184665)

Oct4 Flow Cytometry staining using mouse Anti-Oct4 antibody

Flow cytometric analysis of Human embryonic stem cells labeling Oct4 with ab184665 at 1/50 dilution (green). The isotype control was at 1/50 dilution (Black).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Oct4 antibody [GT486] (ab184665)

Oct4 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Oct4 antibody

Immunohistochemical analysis of paraffin-embedded BT483 (human) xenograft tissue labeling Oct4 with ab184665 at 1/200 dilution.

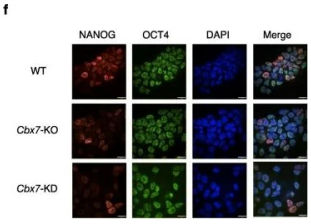


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Immunocytochemistry/ Immunofluorescence - Anti-Oct4 antibody [GT486] (ab184665)

Oct4 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Oct4 antibody

Immunocytochemistry-immunofluorescence using Anti-Oct4 antibody [GT486], ab184665. Publication image from Hu, S. et al., 2020, Genome Biol, 32093739. Legend direct from paper.

Non-classical function of CBX7 for the maintenance of pluripotency. a Heatmap showing CBX7, CBX7’ s classical substrates H3K27me3 and H3K9me3, predicted cofactor NANOG, and H3K27ac enrichment around CBX7 ChIP-seq peak centers. Rows represent CBX7 binding sites and are ranked by normalized H3K27me3 signals. The colors indicate the normalized ChIP-seq enrichment level and the values are scaled by row. CBX7, NANOG, H3K27me3, H3K9me3, and H3K27ac ChIP-seq data were obtained from GSE64008, GSE90893, GSE58023, GSE90895, and GSE67867. b Stacked bar plot showing the percentages of classical sites, non-classical sites, and the whole genome that reside in promoter, gene body, and intergenic regions. The promoter is defined as ± 3 kb around TSS of the gene. c Real-time qPCR analysis for the expression of CBX7 and NANOG in wild type, Cbx7-knockout, and Cbx7-knockdown mESCs. Error bars represent the standard deviation for triplicate experiments, and unpaired t test with Welch’ s correction was used to calculate the statistical significance for comparison (*p value < 0.05, **p value < 0.01, ***p value < 0.001, and n.s represents non-significant). d Western blot analysis of CBX7 and NANOG level in wild type, Cbx7-knockout, and Cbx7-knockdown mESCs. Tubulin was used as a loading control. Blots were cut before antibody application. Gel images for Western blot are shown in Additional file 1: Fig. S6a. e The UCSC genome browser view of CBX7, H3K27me3, H3K9me3, NANOG, and H3K27ac enrichment at a previously reported enhancer of Nanog [37]. Enhancer loci are shaded in purple and signals represent ChIP-seq RPM. f Immunofluorescence staining for NANOG (red), OCT4 (green), DAPI (blue), and merged images in wild type, Cbx7-knockout, and Cbx7-knockdown mESCs. g The fluorescence intensity of NANOG for about 300 nuclei in wild type, Cbx7-knockout, and Cbx7-knockdown mESCs. Unpaired t test with Welch’ s correction was used to calculate statistical significance for comparison

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