abcam

ab200834

Anti-Oct4 antibody [EPR17980]

Anti-Oct4 antibody [EPR17980] (ab200834) is a rabbit monoclonal antibody detecting Oct4 in **Western Blot, Flow Cytometry (Intra), IP, IHC-P, ICC/IF, ChIC/CUT&RUN-seq, ChIP-seq**. Suitable for **Human, Mouse**.

- 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	pH: 7.2 - 7.4 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	EPR17980
Purification technique	Affinity purification Protein A
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ChIC/CUT&RUN-seq

Tested

Species	Human

Dilution info	5 µg
Notes	-

Expected

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

ChIP-seq

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

IP

Tested

Species	Mouse
Dilution info	1/30
Notes	-

Expected

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

WB

Tested

Species	Mouse
Dilution info	1/10000
Notes	-

Species	Human
Dilution info	1/10000
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	5 µg/mL
Notes	-

Species	Human
Dilution info	5 µg/mL
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/60
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.

Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/250
Notes	-

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
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	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-Oct4 antibody [EPR17980] (ab200834) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunoprecipitation (IP), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF), ChIP in Human, Mouse samples.

What is the molecular weight of Oct4?
Anti-Oct4 [EPR17980] (ab200834) specifically detects a band for Oct4 (UniProt: Q01860) at a molecular weight of 38kDa.

Trusted by the scientific community
Anti-Oct4 [EPR17980] (ab200834) was first used in a scientific publication in 2015 and has been cited over 30 times in peer-reviewed journals.

Other related products
We have a range of other formats of antibody clone [EPR17980] also available for your convenience: ab200834, Alexa Fluor® 488 - ab208907, Alexa Fluor® 647 - ab209957, PE - ab213198, Alexa Fluor® 594 - ab217250, Carrier free - ab240358, Carrier free - ab244781

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.

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.

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

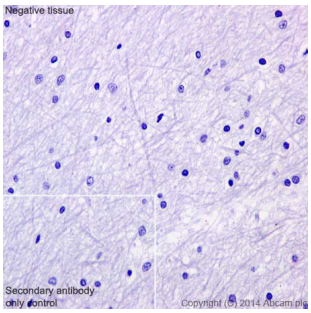
We do not recommend this combination. It is not covered by our product promise.

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.

11 product images

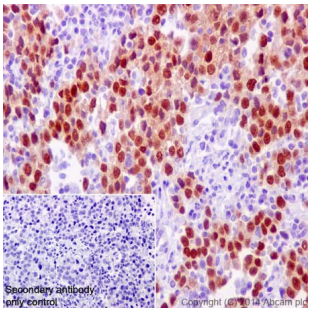


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Oct4 antibody [EPR17980] (ab200834)

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

Immunohistochemical analysis of paraffin-embedded Human cerebral cortex tissue labeling Oct4 with ab200834 at 1/500 dilution, followed Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Human cerebral cortex tissue is a negative control for Oct4. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

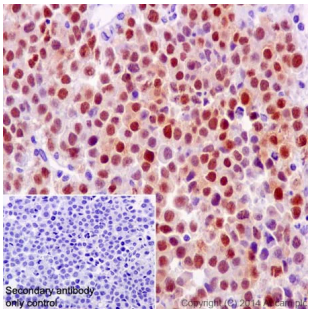


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Oct4 antibody [EPR17980] (ab200834)

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

Immunohistochemical analysis of paraffin-embedded Human spermatocytoma tissue labeling Oct4 with ab200834 at 1/500 dilution, followed Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Nuclear and weakly cytoplasmic staining on Human spermatocytoma tissue is observed. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

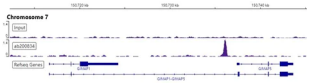


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Oct4 antibody [EPR17980] (ab200834)

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

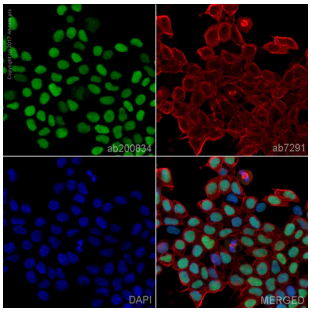
Immunohistochemical analysis of paraffin-embedded Human dysgerminoma of ovary tissue labeling Oct4 with ab200834 at 1/500 dilution, followed Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Nuclear and weakly cytoplasmic staining on Human dysgerminoma of ovary tissue is observed. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



ChIP-sequencing - Anti-Oct4 antibody [EPR17980] (ab200834)

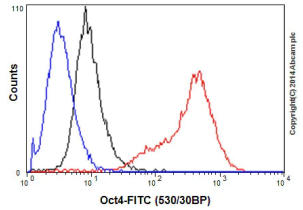
Chromatin was prepared from NCCIT (Human pluripotent embryonic carcinoma cell line) cells. ChIP was performed with 10^7 NCCIT cells and 8 µg of ab200834 [EPR17980]. ChIP DNA was sequenced on the Illumina NovaSeq 6000 to a depth of 30 million reads.



Immunocytochemistry/ Immunofluorescence - Anti-Oct4 antibody [EPR17980] (ab200834)

Oct4 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Oct4 antibody

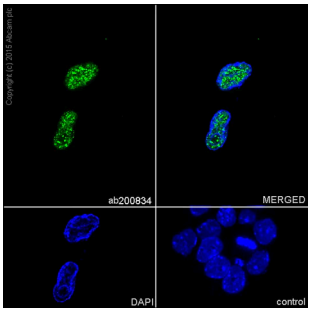
ab200834 staining Oct4 in F9 cells. The cells were fixed with 4% formaldehyde (10 min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1%PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab200834 at a 5µg/ml concentration and ab7291, Mouse monoclonal [DM1A] to alpha Tubulin, at 1µg/ml concentration, followed by a further incubation at room temperature for 1h with an anti-rabbit AlexaFluor® 488 (ab150081) at 2 µg/ml (shown in green) and an anti-mouse AlexaFluor® 594 (ab150120) at 2 µg/ml (shown in pseudocolor red). Nuclear DNA was labelled with DAPI (shown in blue).
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



Flow Cytometry (Intracellular) - Anti-Oct4 antibody [EPR17980] (ab200834)

Oct4 Flow Cytometry (Intracellular) staining using rabbit Anti-Oct4 antibody

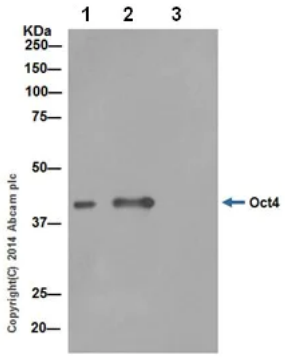
Intracellular flow cytometric analysis of 2% paraformaldehyde-fixed F9 (Mouse embyro testicular cancer cell line) cells labeling Oct4 with ab200834 at 1/60 dilution (red) compared with a rabbit monoclonal IgG isotype control (ab172730;black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody; blue). Goat anti rabbit IgG (FITC) at 1/150 dilution was used as the secondary antibody.



Immunocytochemistry/ Immunofluorescence - Anti-Oct4 antibody [EPR17980] (ab200834)

Oct4 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Oct4 antibody

Immunocytochemistry/Immunofluorescence analysis of F9 (mouse embryonal carcinoma) labelling Oct4 with purified ab200834 at 1/500. Cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. An Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/1000) was used as the secondary antibody (ab150077). Nuclei counterstained with DAPI (blue).
Control: PBS only



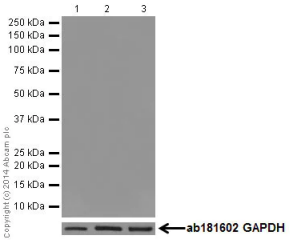
Immunoprecipitation - Anti-Oct4 antibody [EPR17980] (ab200834)

Oct4 was immunoprecipitated from 1mg of F9 (Mouse embyro testicular cancer cell line) whole cell lysate with ab200834 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab200834 at 1/1000 dilution. Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG, was used as secondary antibody at 1/1500 dilution.
Lane 1: F9 whole cell lysate 10 µg (Input). Lane 2: ab200834 IP in F9 whole cell lysate. Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab200834 in F9 whole cell lysate.
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 5 seconds

All lanes:
Immunoprecipitation - Anti-Oct4 antibody [EPR17980] (ab200834)

Predicted band size: 38 kDa



Western blot - Anti-Oct4 antibody [EPR17980] (ab200834)

Low levels of expression in adult tissues
Blocking/Dilution Buffer: 5% NFDM/TBST.

All lanes:
Western blot - Anti-Oct4 antibody [EPR17980] (ab200834) at 1/1000 dilution

Lane 1:
Human placenta lysate at 10 µg

Lane 2:
Human fetal brain lysate at 10 µg

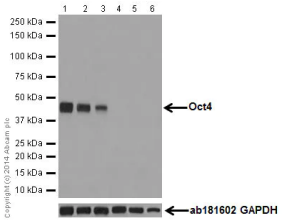
Lane 3:
Human testis lysate at 10 µg

Secondary

All lanes:
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/1000 dilution

Predicted band size: 38 kDa

Exposure time: 3min



Western blot - Anti-Oct4 antibody [EPR17980] (ab200834)

Oct4 Western blot staining using rabbit Anti-Oct4 antibody

Low levels of expression in adult tissues.
Blocking/Dilution Buffer: 5% NFDM/TBST.

All lanes:
Western blot - Anti-Oct4 antibody [EPR17980] (ab200834) at 1/10000 dilution

Lane 1:
NCCIT (Human pluripotent embryonic carcinoma) whole cell lysate at 10 µg

Lane 2:
NTera-2/D1 (Human malignant pluripotent embryonic carcinoma) whole cell lysate at 10 µg

Lane 3:
F9 (Mouse embyro testicular cancer cell line) whole cell lysate at 10 µg

Lane 4:
JAR (Human placenta choriocarcinoma cell line) whole cell lysate at 10 µg

Lane 5:
RAW 264.7 (Mouse macrophage cells transformed with Abelson murine leukemia virus) whole cell lysate at 10 µg

Lane 6:
Mouse testis lysate at 10 µg

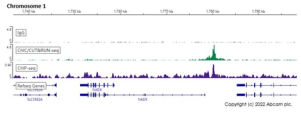
Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

Predicted band size: 38 kDa

Observed band size: 45 kDa

Exposure time: 30s



ChIC/CUT&RUN sequencing - Anti-Oct4 antibody [EPR17980] (ab200834)

ChIC/CUT&RUN was performed using a pAG-MNAse at a final concentration of 700 ng/mL, 2 x 10^5 NCCIT (Human pluripotent embryonic carcinoma cell line) cells and 5 µg of ab200834 [EPR17980]. 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 ChIP data was conducted on chromatin prepared from NCCIT cells. Cells were fixed with 1% formaldehyde for 10 minutes. ChIP was performed with 10^7 NCCIT cells and 8 µg of ab200834. ChIP DNA was sequenced on the Illumina NovaSeq 6000 to a depth of 30 million reads. Additional screenshots of mapped reads can be found in the Protocol booklet in the Product Protocol section. The University of Geneva owns patents relevant to ChIC (Chromatin Immuno-Cleavage) methods.

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