abcam

ab137427

Anti-Oct4 antibody

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7 Preservative: 0.01% Thimerosal (merthiolate) Constituents: PBS, 20% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Polyclonal
Immunogen	Recombinant Fragment Protein within Human POU5F1 aa 1-200. The exact immunogen used to generate this antibody is proprietary information. Database link Q01860
Purification technique	Affinity purification Protein A
Concentration	0.32 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Affinity Purified

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	1/50 - 1/200
Notes	ab171870 - Rabbit polyclonal IgG, 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	Monkey
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000 - 1/20000
Notes	-

Species	Human
Dilution info	1/1000 - 1/20000
Notes	-

Predicted

Species	Monkey
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	Monkey
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

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

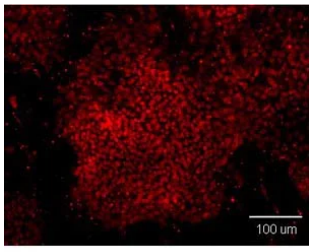
We do not recommend this combination. It is not covered by our product promise.

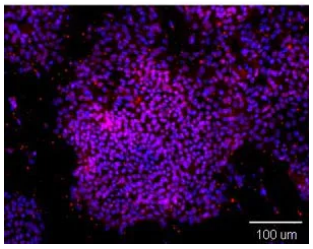
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

6 product images

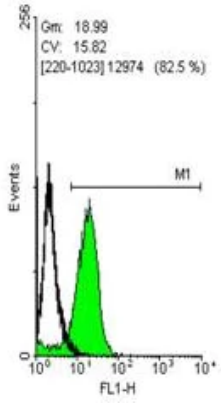




Immunocytochemistry/ Immunofluorescence - Anti-Oct4 antibody (ab137427)

Oct4 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Oct4 antibody

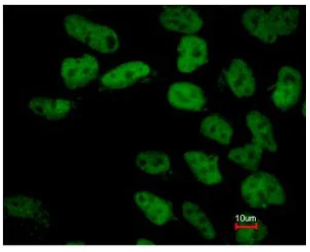
Immunofluorescent analysis of paraformaldehyde-fixed Human embryonic stem cells labelling Oct4 with ab137427 at 1:100 dilution. Lower image shows cells co-stained with DAPI.

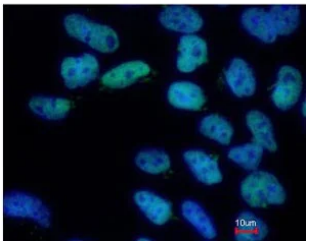


Flow Cytometry - Anti-Oct4 antibody (ab137427)

Oct4 Flow Cytometry staining using rabbit Anti-Oct4 antibody

Flow cytometric analysis of Human Embryonic Stem cells labelling Oct4 with ab137427 at 1:50 dilution (green) or rabbit IgG (black).

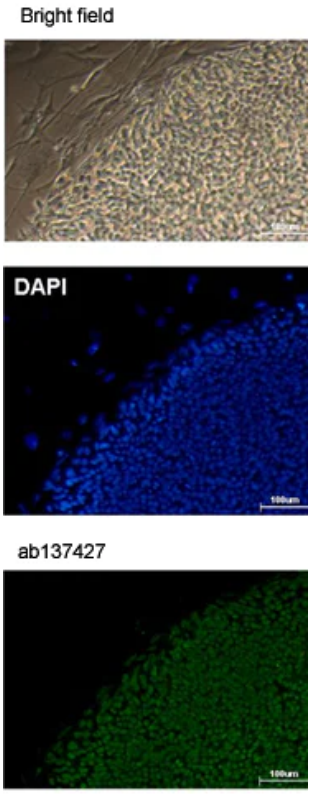




Immunocytochemistry/ Immunofluorescence - Anti-Oct4 antibody (ab137427)

Oct4 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Oct4 antibody

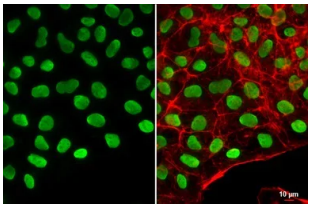
Immunofluorescent analysis of paraformaldehyde-fixed Human Embryonic Stem cells labelling Oct4 with ab137427 at 1:400 dilution. Lower image shows cells co-stained with Hoechst 33342.



Immunocytochemistry/ Immunofluorescence - Anti-Oct4 antibody (ab137427)

Oct4 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Oct4 antibody

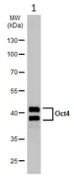
Immunofluorescent analysis of paraformaldehyde-fixed Human embryonic stem cells labelling Oct4 with ab137427 at 1:200 dilution.



Immunocytochemistry/ Immunofluorescence - Anti-Oct4 antibody (ab137427)

Oct4 Immunocytochemistry/ Immunofluorescence staining of NT2D1 cells using rabbit Anti-Oct4 antibody

Immunofluorescence analysis of NT2D1 cells fixed in 4% paraformaldehyde at RT for 15 min labelling Oct4 protein using ab137427 at a 1/500 dilution (Green). phalloidin, a cytoskeleton marker was stained at a 1/200 dilution (Red). Scale bar= 10µm.



Western blot - Anti-Oct4 antibody (ab137427)

Oct4 Western blot staining of Human ESC tissue extract using rabbit Anti-Oct4 antibody

Samples were separated by 10% SDS-PAGE.
All lanes:
Western blot - Anti-Oct4 antibody (ab137427) at 1/5000 dilution

All lanes:
Human ESC tissue extract at 30 µg

Secondary

All lanes:
HRP-conjugated anti-rabbit IgG

Predicted band size: 38 kDa

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