

Product Specification Sheet

OCT4 antibody

<input type="checkbox"/> Cat # OCT411-A	Rabbit anti-Mouse OCT4 antibody	SIZE: 100 µg
<input type="checkbox"/> Cat # OCT411-C	Recombinant OCT4 protein control for Western blotting	SIZE: 200 µl

Oct-4 (octamer-binding transcription factor 4), also known as POU5F1 (POU domain, class 5, transcription factor 1), is a protein that in humans is encoded by the POU5F1 gene. Expressed mainly in the nucleus, OCT4 interacts with UBE2I, ZSCAN10, PKM, WWP2 etc. and OCT4-PKM interaction positively regulate OCT4's transcriptional activity. Once translated, its modifications such as sumoylation enhances the protein stability, DNA binding and transactivation activity and is required for enhanced YES1 expression. OCT4 undergoes 'Lys-63'-linked polyubiquitination by WWP2 leading to proteasomal degradation. Oct-4 is a homeodomain transcription factor of the POU family expressed in ESCs and germ cells. It is strongly implicated in the process of maintaining as well as regaining stem-cell pluripotency and functions as a key regulator of mammalian germline development. As such, it is frequently used as a marker for undifferentiated cells. Oct-4 is a member of the octamer transcription factor family, so named because they bind the octameric (8-unit) DNA nucleotide sequence "ATTGTCAT". Unlike most pluripotent stem cell markers, the biological role of Oct-4 has been well characterized. OCT4 is expressed in developing brain with highest levels in specific cell layers of the cortex, the olfactory bulb, hippocampus and cerebellum. Its expression decreases gradually after embryoid body formation, however, improper re-activation of OCT4 contributes to oncogenic processes and it has been implicated in certain malignancies such as breast and ovarian cancer.

Source of Antigen or Antibodies

Uniprot: P20263

Host: Rabbit

Clonality: Polyclonal

Purification: Ammonium sulfate followed by peptide affinity purification

Immunogen: Synthetic peptide derived from Mouse OCT4

Species Reactivity: Mouse and Human

Cross reactivity: The peptide region used as an immunogen exhibits 100% homology with Rat. 93% with Monkey, Human, Pig, Bovine, Goat, Dog, Horse, and Cat

Subcellular Location: Nucleus and Cytoplasm

Recommended Secondary Antibody: Goat anti-Rabbit IgG-HRP (**ADI cat#20320**)

Negative Control: Non-immune Rabbit IgG (**ADI cat# 20009-1**).

Form & Storage of Antibodies

Affinity purified IgG

Concentration: 0.5 mg/ml Volume: 200 µl
Supplied in PBS pH 7.4 + 0.1% BSA
The antibody can be made available carrier free or conjugated to HRP, Biotin, or FITC on request

Lyophilized powder

Reconstitute powder in 200 µl distilled water to 0.5 mg/ml

Storage:

Short-term: 4°C for 1 month

Long-term: at -20°C or below in suitable aliquots after reconstitution for 1 year. Do not expose to multiple freeze/thaw cycles or store working, diluted solutions.

Recommended Usage

Western Blotting: 0.5-2 µg/ml

Predicted band size: ~45 kDa

OCT411-C: Contains a recombinant full length human OCT4 at a concentration of 1 ng/µl in Laemmli buffer (62.5 mM Tris-HCL, pH 6.8, 2% SDS, 10% glycerol, 5% BME, and 0.002% bromophenol blue). Heat for 5 minutes at 95°C then load 1-5 µl. Store at -20°C in suitable size aliquots, do not expose to multiple freeze/thaw cycles. **Note:** Due to the addition of tags, the protein appears slightly larger than native OCT4.

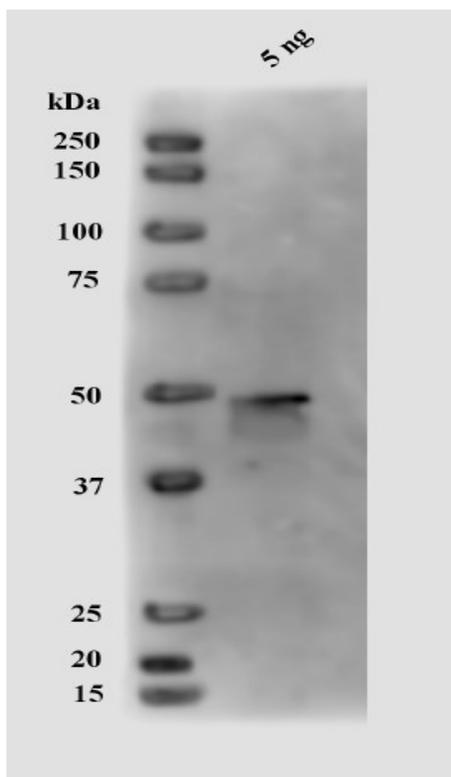
Immunohistochemistry: Not tested for use in-house. We suggest 1-10 µg/ml, permeabilization with Triton X-100 may be necessary.

Above concentrations are a *suggestion*, user's must optimize their assay based on their own conditions. The antibody may work in other applications such as Immunocytochemistry or IP. These methods have not been tested by ADI.

**This product is for In vitro research use only.*

Related materials also available from ADI

Catalog#	Description
SOX2-A antibody	Rabbit anti-Mouse Transcription Factor SOX-2
KLF411-A antibody	Rabbit anti-Mouse Krueppel-like factor 4 (KLF4)
AB-21110	Mouse Monoclonal Anti-Human c-Myc
OCT411-A	1917011A



5 ng of full length recombinant Human OCT4 (**OCT411-C**) was heated for 5 minutes at 95°C then separated on an a 10% SDS-PAGE gel. The gel was run for ~1 hour and 30 minutes at 100V and transferred to a 0.2 µm nitrocellulose membrane using the 'Mixed MW' settings on a Transblot Turbo (Biorad). The blot was blocked for 1 hour at room temperature with Fish plasma (Aquablock, EastCoastBio). **OCT411-A** was diluted with TBST+0.1% BSA to 1 µg/ml and incubated overnight at 4°C. The blot was washed with TBS-T 3 times for 5 minutes each. Goat anti-rabbit IgG HRP (**ADI cat#20320**) was diluted 1:10,000 (50 ng/ml) in TBST+0.1% BSA and incubated for 1 hour at room temperature. The blot was washed with TBST 3 times for 5 minutes each. The blot was then incubated with ADI Femto ECL substrate (**ADI cat#80210**) for 5 minutes and imaged on a CCD imaging system (LI-COR, C-DiGit).