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Mouse Anti-Oct 4 (1F4)antibody

SLM-52001M

Product Name	Oct 4 (1F4)
Chinese Name	胚胎 Stem cells 关键蛋白单克隆抗体
Alias	MGC22487; Oct 3; Oct 4; Oct-3; Oct-4; OCT3; Oct4; Octamer binding protein 3; Octamer-binding protein 3; Octamer binding protein 4; Octamer binding transcription factor 3; Octamer-binding transcription factor 3; Octamer-4; POU domain transcription factor OCT4; OTF3; OTF4; OTF 3; OTF 4; OTF-3; POU class 5 homeobox 1; POU domain, class 5, transcription factor 1; POU domain class 5 transcription factor 1; PO5F1_HUMAN; POU type homeodomain containing DNA binding protein ; POU5F1.
Research Area	Cell biology Chromatin and nuclear signals Signal transduction Stem cells Cyclin transcriptional regulatory factor Cell type markers Epigenetics
Immunogen Species	Mouse
Clonality	Monoclonal
Clone NO.	1F4
React Species	(predicted:Human)
Applications	WB=1:500-2000,ICC/IF=1:100-200 not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Theoretical molecular weight	39kDa
Cellular localization	The nucleus
Form	Liquid
Concentration	1mg/ml
immunogen	KLH conjugated synthetic peptide derived from human OCT4: 1-100/360
Lsotype	IgG
Purification	affinity purified by Protein A
Buffer Solution	1M TBS(pH7.4) with 1% BSA, 3% Proclin300 and 50% Glycerol.
Storage	Shipped at 4°C. Store at -20 °C for one year. Avoid repeated freeze/thaw cycles.

Attention

This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.

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Product Detail

Expression of the POU-domain transcription factor Octamer-4 (Oct-4) is widely regarded as a hallmark of pluripotent stem cells. The relationship of Oct-4 to pluripotent stem cells is indicated by its tightly restricted expression to undifferentiated pluripotent stem cells. Upon differentiation to somatic lineages, the expression of Oct-4 disappears rapidly. Unlike the majority of pluripotent stem cell markers, the biological role of Oct-4 has been well characterized. Studies performed in mice point to the critical role of Oct-4 in the establishment and/or maintenance of pluripotent stem cells in an uncommitted state.

Function:
Transcription factor that binds to the octamer motif (5'-ATTTGCAT-3'). Forms a trimeric complex with SOX2 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.

Subunit:
Interacts with UBE2I and ZSCAN10. Interacts with PKM2. Interacts with WWP2.

Subcellular Location:
Nucleus.Note=Expressed in a diffuse and slightly punctuate pattern.

Tissue Specificity:
Expressed in developing brain. Highest levels found in specific cell layers of the cortex, the olfactory bulb, the hippocampus and the cerebellum. Low levels of expression in adult tissues.

Post-translational modifications:
Sumoylation enhances the protein stability, DNA binding and transactivation activity. Sumoylation is required for enhanced YES1 expression (By similarity).
Ubiquitinated; undergoes 'Lys-63'-linked polyubiquitination by WWP2 leading to proteasomal degradation (By similarity).
ERK1/2-mediated phosphorylation at Ser-111 promotes nuclear exclusion and proteasomal degradation. Phosphorylation at Thr-235 and Ser-236 decrease DNA-binding and alters ability to activate transcription.

Similarity:

Belongs to the POU transcription factor family. Class-5 subfamily.
Contains 1 homeobox DNA-binding domain.
Contains 1 POU-specific domain.

SWISS:
Q01860

Gene ID:
5460

Database links:

Entrez Gene: 282316 Cow

Entrez Gene: 5460 Human

Entrez Gene: 18999 Mouse

Entrez Gene: 100127461 Pig

Entrez Gene: 294562 Rat

Omim: 164177 Human

SwissProt: O97552 Cow

SwissProt: Q01860 Human

SwissProt: P20263 Mouse

SwissProt: Q9TSV5 Pig

Unigene: 249184 Human

Unigene: 632482 Human

Unigene: 646545 Human

Unigene: 17031 Mouse

Unigene: 161748 Rat