10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Rabbit Anti-Nanog Polyclonal Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP52287

Product Information

Application	WB, IHC-P, IHC-F, IF, E
Primary Accession	Q80Z64
Reactivity	Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	34240
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from mouse Nanog
Epitope Specificity	71-170/305
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SUBCELLULAR LOCATION	Nucleus.
SIMILARITY	Belongs to the Nanog homeobox family. Contains 1 homeobox DNA-binding domain.
SUBUNIT	Interacts with SMAD1 and SALL4.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Nanog is a newly identified homeodomain-bearing transcriptional factor. Nanog expression is specific to early embryos and pluripotential stem cells including mouse and human embryonic stem (ES) and embryonic germ (EG) cells. It is a key molecule involved in the signaling pathway for maintaining the capacity for self-renewal and pluripotency, bypassing regulation by the STAT3 pathway. Nanog mRNA is present in pluripotent mouse and human cell lines, and absent from differentiated cells. Nanog-deficient ES cells lose pluripotency and differentiate into extraembryonic endoderm lineage. Thus it is one of the molecular markers suitable for recognizing the undifferentiated state of stem cells in the mouse and human. NANOG is a new marker for testicular carcinoma in situ and germ cell tumors. NANOG is a gene expressed in embryonic stem cells (ESCs) and is thought to be a key factor in maintaining pluripotency. NANOG thought to function in concert with other factors such as POU5F1 and SOX2 to establish ESC identity. These cells offer an important area of study because of their ability to maintain pluripotency. In other words, these cells have the ability to become virtually any cell of any of the three germ layers (endoderm, ectoderm, mesoderm).

Additional Information

Gene ID	71950
Other Names	ENK; ecat4; 2412E2Rik; Homeobox protein NANOG; ES cell-associated protein

	4; Early embryo specific expression NK-type homeobox protein; Homeobox transcription factor Nanog; Nanog
Target/Specificity	Expressed in testicular carcinoma and derived germ cell tumors (at protein level). Expressed in fetal gonads, ovary and testis. Also expressed in ovary teratocarcinoma cell line and testicular embryonic carcinoma. Not expressed in many somatic organs and oocytes.
Dilution	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500,Flow-Cyt=3 g/Test ,ELISA=1:5000-10000
Format	0.01M TBS(pH7.4) with 1% BSA, 0.09% (W/V) sodium azide and 50% Glyce
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	Nanog
Synonyms	Ecat4, Enk
Function	Transcription regulator involved in inner cell mass and embryonic stem (ES) cells proliferation and self-renewal (PubMed:25825768). Imposes pluripotency on ES cells and prevents their differentiation towards extraembryonic endoderm and trophectoderm lineages. Blocks bone morphogenetic protein-induced mesoderm differentiation of ES cells by physically interacting with SMAD1 and interfering with the recruitment of coactivators to the active SMAD transcriptional complexes. Acts as a transcriptional activator or repressor. Binds optimally to the DNA consensus sequence 5'- TAAT[GT][GT]-3' or 5'-[CG][GA][CG]C[GC]ATTAN[GC]-3'. Binds to the POU5F1/OCT4 promoter (By similarity). Able to autorepress its expression in differentiating (ES) cells: binds to its own promoter following interaction with ZNF281/ZFP281, leading to recruitment of the NuRD complex and subsequent repression of expression. When overexpressed, promotes cells to enter into S phase and proliferation.
Cellular Location	Nucleus {ECO:0000255|PROSITE-ProRule:PRU00108, ECO:0000269|PubMed:15582778}
Tissue Location	Not expressed in oocytes and spermatogonia (at protein level). Not expressed in many somatic organs, ovary, testis, fibroblast and hematopoietic cell lines.

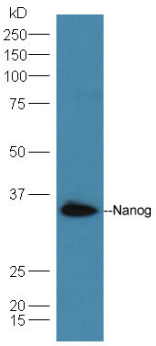
Background

Transcription regulator involved in inner cell mass and embryonic stem (ES) cells proliferation and self-renewal. Imposes pluripotency on ES cells and prevents their differentiation towards extraembryonic endoderm and trophectoderm lineages. Blocks bone morphogenetic protein-induced mesoderm differentiation of ES cells by physically interacting with SMAD1 and interfering with the recruitment of coactivators to the active SMAD transcriptional complexes. Acts as a transcriptional activator or repressor. Binds optimally to the DNA consensus sequence 5'-TAAT[GT][GT]-3' or 5'- [CG][GA][CG]C[GC]ATTAN[GC]-3'. Able to autorepress its expression in differentiating (ES) cells: binds to its own promoter following interaction with ZNF281/ZFP281, leading to recruitment of the NuRD complex and subsequent repression of expression. When overexpressed, promotes cells to enter into S phase and proliferation.

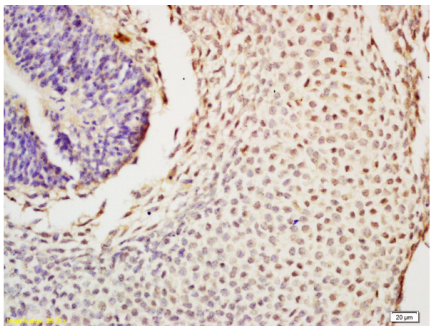
References

Mitsui K.,et al.Cell 113:631-642(2003).
Chambers I.,et al.Cell 113:643-655(2003).
Wang S.-H.,et al.Gene Expr. Patterns 3:99-103(2003).
Hart A.H.,et al.Dev. Dyn. 230:187-198(2004).
Carninci P.,et al.Science 309:1559-1563(2005).

Images



Lane 1: A549 cell lysates probed with Rabbit Anti-Nanog Polyclonal Antibody, Unconjugated (AP52287) at 1:300 overnight at 4˚C. Followed by conjugation to secondary antibody at 1:5000 for 90 min at 37˚C.



Formalin-fixed and paraffin embedded mouse tooth germ tissue labeled with Anti-Nanog Polyclonal Antibody (AP52287), Unconjugated at 1:200, followed by conjugation to the secondary antibody and DAB staining