

**NANOG Antibody**  
**Catalog # ASC11057****Specification****NANOG Antibody - Product Information**

Application	WB, IHC-P, IF, E
Primary Accession	<a href="#">Q9H9S0</a>
Other Accession	<a href="#">EAW88651</a> , <a href="#">119609057</a>
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Application Notes	NANOG antibody can be used for detection of NANOG by Western blot at 1 - 2 µg/mL. Antibody can also be used for immunohistochemistry starting at 5 µg/mL. For immunofluorescence start at 20 µg/mL.

**NANOG Antibody - Additional Information**

Gene ID	79923
<b>Target/Specificity</b>	
NANOG;	

**Reconstitution & Storage**

NANOG antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

**Precautions**

NANOG Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

**NANOG Antibody - Protein Information**

**Name** NANOG

**Function**

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 trophoctoderm 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 (PubMed:<a href="http://www.uniprot.org/citations/25825768" target="\_blank">25825768</a>). 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:15983365}

#### Tissue Location

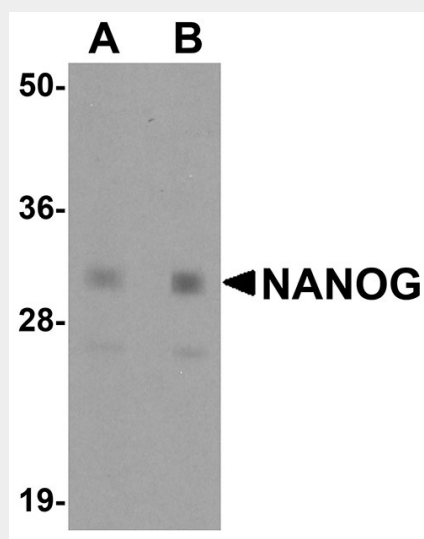
Expressed in testicular carcinoma and derived germ cell tumors (at protein level). Expressed in fetal gonads, ovary and testis. Also expressed in ovary teratocarcinoma cell line and testicular embryonic carcinoma. Not expressed in many somatic organs and oocytes.

### NANOG Antibody - Protocols

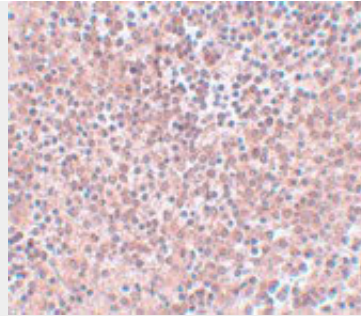
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

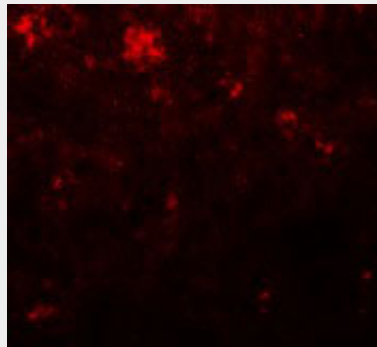
### NANOG Antibody - Images



Western blot analysis of NANOG in human spleen tissue lysate with NANOG antibody at (A) 1 and (B) 2 µg/mL.



Immunohistochemistry of NANOG in human spleen tissue with NANOG antibody at 5 µg/mL.



Immunofluorescence of NANOG in Human Spleen cells with NANOG antibody at 20 µg/mL.

### **NANOG Antibody - Background**

NANOG Antibody: Expression of NANOG is required for the maintenance of pluripotency in epiblast and embryonic stem (ES) cells as well as for the ability to maintain ES self-renewal independently of LIF/Stat3. The role of NANOG in embryonic development suggested that it might be useful in the creation of stem cells that might be useful in cell replacement therapies in the treatment of several degenerative diseases. Artificial stem cells, termed induced pluripotent stem (iPS) cells, can be created by expressing POU5F1 (also known as Oct-4), another germline-specific transcription factor, and the transcription factors Sox2, Klf4 and Lin28 along with c-Myc in mouse fibroblasts. More recently, experiments have demonstrated that iPS cells could be generated using expression plasmids expressing NANOG, Sox2, Klf4 and c-Myc, eliminating the need for virus introduction, thereby addressing a safety concern for potential use of iPS cells in regenerative medicine.

### **NANOG Antibody - References**

Chambers I, Colby D, Robertson M, et al. Functional expression cloning of Nanog, a pluripotency sustaining factor in embryonic stem cells. *Cell*2003; 113:643-55.  
Mitsui K, Tokuzowa Y, Itoh H, et al. The homeoprotein Nanog is required for maintenance of pluripotency in mouse epiblast and ES cells. *Cell*2003; 113:631-42.  
Carpenter MK, Rosler E, and Rao MS. Characterization and differentiation of human embryonic stem cells. *Cloning Stem Cells*2003; 5:79-88.  
Scholer HR, Ruppert S, Suzuki N, et al. New type of POU domain in germ line-specific protein Oct-2. *Nature*1990; 344:435-9.