PRODUCT DATA SHEET

Product: Anti-Human Nanog pAb

Cat. No.: **PC-102 (100 µL)**

Description:
Transcriptional factors, OCT3/4 (POU5F1) and STAT3 function as key regulators in maintaining pluripotency of stem cells. Thus, POU5F1 and STAT3 have been widely used as molecular markers of pluripotential stem cells. Pluripotential cell-specific *Nanog* gene is a newly identified homeodomain-bearing transcriptional factor. Importantly, *Nanog* is expressed 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. Therefore, *Nanog* is one of the molecular markers suitable for recognizing the undifferentiated state of stem cells in the mouse and human.

Specificity:
Recognizes human Nanog.

Species Reactivity:
Human. No cross-reactivity to other species.

Host:
Rabbit

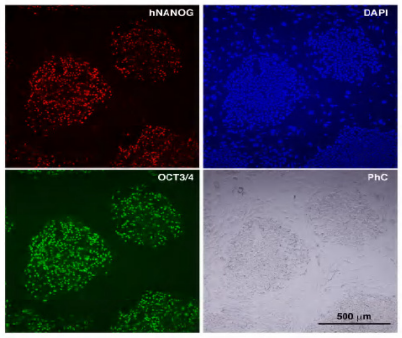
Immunogen:
Human Nanog peptide.

Format:
Affinity-purified immunoglobulin at 0.2 mg/mL in PBS with 0.1% sodium azide.

Storage and Stability:
Store at -20°C until use. Once thawed, do not refreeze. The antibody is stable at 4°C for several months. Aliquot to avoid freeze/thaw cycles.

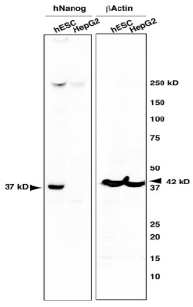
Applications and Suggested Dilutions:
- Immunocytochemistry: Use at 1:200 dilution.
- Western blot: Use at 1:2,000 – 1:4,000 dilution.

Figure 1. Immunocytochemistry with PC-102



IF using hNanog antibody
Cells: Human embryonic stem cells, grown on mouse embryonic fibroblasts.
Fixation: 4% PFA/PBS, 5 min
Permeabilization; 0.1% triton X/ PBS
Blocking: 2% skim milk/PBS, 30 min
1st antibodies: Polyclonal anti-human Nanog antibody, 1/200
Monoclonal anti-Oct3/4 (sc5279), 1/100
2nd antibodies: Alexa546 anti-Rabbit IgG 1/500 for hNanog
Alexa488 anti-Mouse IgG 1/500 for Oct3/4
Nuclear staining: DAPI

Figure 2. Western blot with PC-102



Western blot using hNanog antibody
Proteins: 20 µg/lane
Blocking: 5% skim milk/PBS
1st antibodies: Polyclonal anti-human Nanog antibody, 1/2,000 - 1/4,000
Monoclonal anti-βActin (abm, G043), 1/5,000
2nd antibodies: HRP anti-Rabbit IgG 1/300 for hNanog
HRP anti-Mouse IgG 1/200 for βActin
Detection: ECL plus (Amersham)

The optimal dilution for a specific application should be determined by the researcher.

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References:

1. Smith, A.G., et al. Inhibition of pluripotential embryonic stem cell differentiation by purified polypeptides. Nature 336:688-690 (1988).
2 Williams, R.L., et al. Myeloid leukemia inhibitory factor maintains the developmental potential of embryonic stem cells. Nature 336:684-687 (1988).
3. Chambers, I., et al. Functional expression cloning of Nanog, a pluripotency sustaining factor in embryonic stem cells. Cell 113:643-655 (2003).
4. Mitsui, K., et al. The homeoprotein Nanog is required for maintenance of pluripotency in mouse epiblast and ES cells. Cell 113:631-642 (2003).
5. Hatano, S.Y., et al. Pluripotential competence of cells associated with Nanog activity. Mech. Dev. 122:67-79 (2005).
6. Yamaguchi, S. et al., Nanog expression in mouse germ cell development. Gene Expression Patterns. 5(5):639-646 (2005).

Limitations:

For *in vitro* research use only. Not for use in diagnostics or in humans.

Warranty:

No warranties, expressed or implied, are made regarding the use of this product. KAMIYA BIOMEDICAL COMPANY is not liable for any damage, personal injury, or economic loss caused by this product.