

Technical Data Sheet

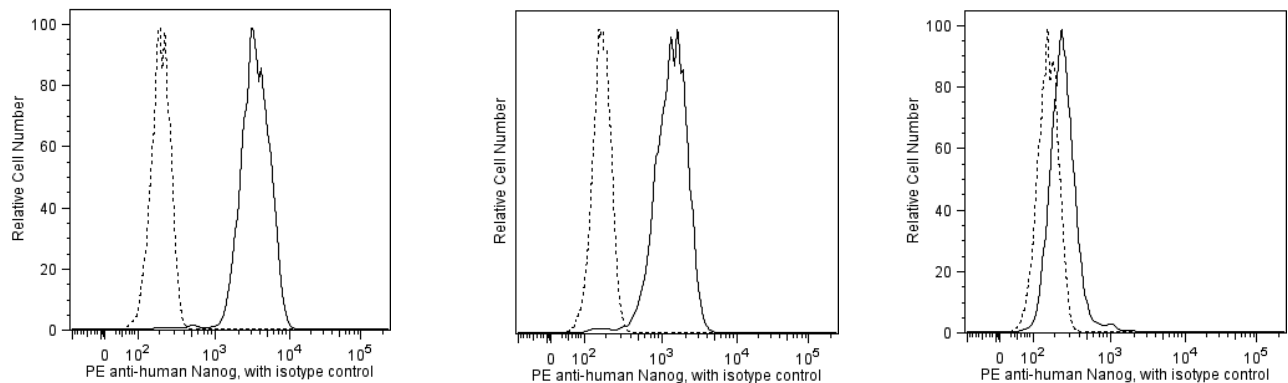
PE Mouse anti-human Nanog

Product Information

Material Number:	560483
Size:	100 tests
Vol. per Test:	20 µl
Clone:	N31-355
Immunogen:	Human Nanog Recombinant Protein
Isotype:	Mouse IgG1, κ
Reactivity:	Confirmed: Human
Storage Buffer:	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

Description

The N31-355 monoclonal antibody reacts with human Nanog (named for Tir Na Nog, the land of the ever-young of Celtic mythology), which is a homeobox transcription factor required for the maintenance of the undifferentiated state of pluripotent stem cells. Nanog expression counteracts the differentiation-promoting signals induced by the extrinsic factors LIF (Leukemia Inhibitory Factor) and BMP (Bone Morphogenic Protein). When Nanog expression is down-regulated, cell differentiation can proceed. Proteins that regulate Nanog expression include transcription factors Oct4, SOX2, FoxD3, and Tcf3 and tumor suppressor p53. Nanog is one of the factors that can contribute to reprogramming of differentiated cells to an induced pluripotent stem cell state.



**Spontaneous differentiation of human ES H9 (WiCell, Madison, WI).** H9 cells, passage 31, grown in mTESR™1 media (StemCell Technologies) on BD Matrigel™ hESC-qualified Matrix (Cat. No. 354277) were treated with human ES basal culture media that contained Knockout™ Serum Replacement (Life Technologies) and 10µM Retinoic Acid (Sigma) for 3 days. Cells were harvested with Accutase™ (Innovative Cell Technologies) on Day 0 (left panel), Day 1 (middle panel) and Day 3 (right panel), fixed in BD Cytotfix™ buffer (Cat. No. 554655), permeabilized with BD™ Phosflow Perm/Wash buffer I (Cat. No. 557885) and stained with PE anti-human Nanog (solid line) or PE Mouse IgG1, κ Isotype Control (Cat. No. 554680). Flow cytometry was performed on a BD™ LSR II flow cytometry system. This reagent will also work in BD™ Phosflow Perm II and III buffers.

Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography. The antibody was conjugated with R-PE under optimum conditions, and unconjugated antibody and free PE were removed. Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze.

Application Notes

Application

Intracellular staining (flow cytometry)	Routinely Tested
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Suggested Companion Products

Catalog Number	Name	Size	Clone
554655	Fixation Buffer	100 ml	(none)
557885	Perm/Wash Buffer I	125 ml	(none)
554680	PE Mouse IgG1, κ Isotype Control	0.1 mg	MOPC-21

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## Product Notices

1. Please refer to [www.bdbiosciences.com/pharming/protocols](http://www.bdbiosciences.com/pharming/protocols) for technical protocols.
2. This reagent has been pre-diluted for use at the recommended Volume per Test. We typically use  $1 \times 10^6$  cells in a 100- $\mu$ l experimental sample (a test).
3. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at [www.bdbiosciences.com/colors](http://www.bdbiosciences.com/colors).
4. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
5. Source of all serum proteins is from USDA inspected abattoirs located in the United States.

## References

Chambers I. The molecular basis of pluripotency in mouse embryonic stem cells. *Cloning Stem Cells*. 2004; 6(4):386-391. (Biology)

Chambers I, Colby D, Robertson M, et al. Functional expression cloning of Nanog, a pluripotency sustaining factor in embryonic stem cells. *Cell*. 2003; 113:643-655. (Biology)

Ezeh UI, Turek PJ, Reijo RA, Clark AT. Human embryonic stem cell genes OCT4, NANOG, STELLAR, and GDF3 are expressed in both seminoma and breast carcinoma. *Cancer*. 2005; 104(10):2255-2265. (Biology)

Mitsui K, Tokuzawa Y, Itoh H, et al. The homeoprotein Nanog is required for maintenance of pluripotency in mouse epiblast and ES cells. *Cell*. 2003; 113:631-642. (Biology)

Pan G, Thomson JA. Nanog and transcriptional networks in embryonic stem cell pluripotency. *Cell Res*. 2007; 17:42-49. (Biology)

Sun Y, Li H, Yang H, Rao MS, Zhan M. Mechanisms controlling embryonic stem cell self-renewal and differentiation. *Crit Rev Eukaryot Gene Expr*. 2006; 16(3):211-231. (Biology)

Suzuki A, Raya A, Kawakami Y, et al. Nanog binds to Smad1 and blocks bone morphogenetic protein-induced differentiation of embryonic stem cells. *Proc Natl Acad Sci U S A*. 2006; 103(27):10294-10299. (Biology)

Yu J, Vodyanik MA, Smuga-Otto K, Antosiewicz-Bourget J, Frane JL, Tian S, Nie J, Jonsdottir GA, Ruotti V, Stewart R, Slukvin II, Thomson JA. Induced pluripotent stem cell lines derived from human somatic cells. *Science*. 2007; 318(5858):1917-1920. (Biology)

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