

Technical Data Sheet

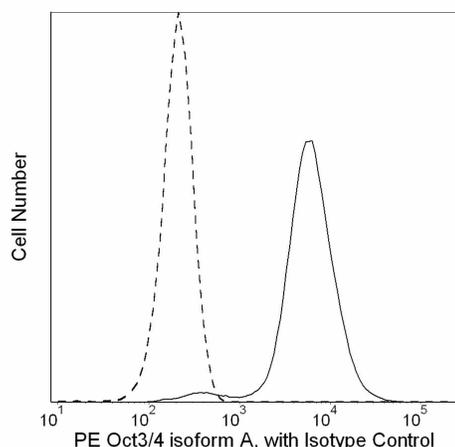
PE Mouse anti-Oct3/4 (Human Isoform A)

Product Information

Material Number:	561556
Alternate Name:	Oct3/4A, Oct-3A, OTF-3, NF-A3, OTF4, POU5F1, MGC22487
Entrez Gene ID:	5460, 18999
Size:	50 tests
Vol. per Test:	5 µl
Clone:	O50-808
Immunogen:	Human Oct3/4 Isoform A Recombinant Protein
Isotype:	Mouse (BALB/c) IgG1, κ
Reactivity:	QC Tested: Human
Storage Buffer:	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

Description

Development of a multicellular organism from a single fertilized egg is regulated by the coordinated activity of DNA transcription factors. Oct3/4, a member of the POU family of transcription factors, functions in pluripotent cells of early embryonic stem (ES) cell lines and embryonal carcinomas (EC). The human POU5F1 gene can encode various splice variants, two of which are Oct3/4A and Oct3/4B. Both isoforms share identical POU DNA-binding and C-terminal domains but differ in their N-terminal domain. The N-terminal domain of Oct3/4B is inhibitory to the DNA binding domain and therefore cannot stimulate transcription of Oct3/4-dependent genes. Oct3/4B can be detected in both pluripotent and some differentiated cell types in both the nucleus and cytoplasm, but its function is unclear. There is not an equivalent to Oct3/4B in mouse. Oct3/4A is expressed in the nucleus and has been demonstrated to orchestrate the transcription of Oct3/4-dependent genes. It has been demonstrated that the expression of Oct3/4 isoforms can vary greatly in different cell types, and discrimination of these is crucial for assessing Oct3/4 expression and function. The O50-808 monoclonal antibody recognizes human Oct3/4 Isoform A and mouse Oct3/4.



Analysis of Oct3/4 Isoform A on human embryonic stem (ES) cells. H9 human ES cells (WiCell, Madison, WI) were harvested, fixed in BD Cytotfix™ fixation buffer (Cat. No. 554655), permeabilized with BD Phosflow™ Perm/Wash buffer I (Cat. No. 557885) and stained with matching concentrations of either PE Mouse IgG1, κ isotype control (Dashed line, Cat. No. 554680) or PE Mouse anti-Oct3/4 (Human Isoform A) monoclonal antibody (solid line). The histograms were derived from gated events based on light scattering characteristics of the H9 cell line. Flow cytometry was performed on a BD LSR™ II flow cytometry system. BD Phosflow™ Perm Buffer III can also be used with this antibody conjugate.

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
554680	PE Mouse IgG1, κ Isotype Control	0.1 mg	MOPC-21
554655	Fixation Buffer	100 ml	(none)
557885	Perm/Wash Buffer I	125 ml	(none)
558050	Perm Buffer III	125 ml	(none)

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Product Notices

1. This reagent has been pre-diluted for use at the recommended Volume per Test. We typically use 1×10^6 cells in a 100- μ l experimental sample (a test).
2. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
3. An isotype control should be used at the same concentration as the antibody of interest.
4. For fluorochrome spectra and suitable instrument settings, please refer to our Fluorochrome Web Page at www.bdbiosciences.com/colors.
5. 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.
6. Source of all serum proteins is from USDA inspected abattoirs located in the United States.

References

- Nishimoto M, Fukushima A, Okuda A, Muramatsu M. The gene for the embryonic stem cell coactivator UTF1 carries a regulatory element which selectively interacts with a complex composed of Oct-3/4 and Sox-2. *Mol Cell Biol.* 1999; 19(8):5453-5465. (Biology)
- Okamoto K, Okazawa H, Okuda A, Sakai M, Muramatsu M, Hamada H. A novel octamer binding transcription factor is differentially expressed in mouse embryonic cells. *Cell.* 1990; 60(3):461-472. (Biology)
- Pan G, Thomson JA. Nanog and transcriptional networks in embryonic stem cell pluripotency. *Cell Res.* 2007; 17:42-49. (Biology)
- Rosfjord E, Scholtz B, Lewis R, Rizzino A. Phosphorylation and DNA binding of the octamer binding transcription factor Oct-3. *Biochem Biophys Res Commun.* 1995; 212(3):847-853. (Biology)
- Vigano MA, Staudt LM. Transcriptional activation by Oct-3: evidence for a specific role of the POU-specific domain in mediating functional interaction with Oct-1. *Nucleic Acids Res.* 1996; 24(11):2112-2118. (Biology)
- Yuan H, Corbi N, Basilico C, Dailey L. Developmental-specific activity of the FGF-4 enhancer requires the synergistic action of Sox2 and Oct-3. *Genes Dev.* 1995; 9(21):2635-2645. (Biology)