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#9093**StemLight™ Pluripotency Transcription Factor Antibody Kit****Orders:** 877-616-CELL (2355)
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1 Kit (3 x 20 microliters)

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For Research Use Only. Not for Use in Diagnostic Procedures.

Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
Nanog (D73G4) XP® Rabbit mAb	4903	20 µl	42 kDa	Rabbit IgG
Oct-4A (C30A3) Rabbit mAb	2840	20 µl	45 kDa	Rabbit IgG
Sox2 (D6D9) XP® Rabbit mAb	3579	20 µl	35 kDa	Rabbit

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.**Description**

StemLight® Pluripotency Transcription Factor Antibody Kit contains a panel of antibodies for the detection of Oct-4, Nanog, and Sox2, key components of the core pluripotency transcription network in embryonic stem (ES) and induced pluripotent stem (iPS) cells. The kit can be used to track the pluripotent potential of human ES or iPS cells. The loss of these markers indicates a loss of pluripotency or differentiation of the culture. The kit components are pre-optimized for parallel use in immunofluorescent analysis at a standard dilution, but components are also validated for use in other applications - please refer to individual datasheet information for application specific recommendations. Enough reagents are provided for 160 immunofluorescent assays based on a working volume of 100 µl.

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Background

Pluripotency is the ability of a cell to differentiate into cell types of the three germ layers, the endoderm, ectoderm and mesoderm. It is a property shared by embryonic stem cells, embryonic carcinoma, and induced pluripotent cells. Oct-4, Sox2, and Nanog are key transcriptional regulators that are highly expressed in pluripotent cells (1). Together they form a transcriptional network that maintains cells in a pluripotent state (2,3). Overexpression of Oct-4 and Sox2, along with KLF4 and c-Myc can induce pluripotency in both mouse and human somatic cells, highlighting their roles as key regulators of the transcriptional network necessary for renewal and pluripotency (4-5). It has also been demonstrated that overexpression of Oct-4, Sox2, Nanog, and Lin28 can induce pluripotency in human somatic cells (6). Upon differentiation of pluripotent cultures, expression of Oct-4, Nanog, and Sox2 is downregulated.

Background References

1. Looijenga, L.H. et al. (2003) *Cancer Res* 63, 2244-50.
2. Pesce, M. and Schöler, H.R. (2001) *Stem Cells* 19, 271-8.
3. Pan, G. and Thomson, J.A. (2007) *Cell Res* 17, 42-9.
4. Takahashi, K. and Yamanaka, S. (2006) *Cell* 126, 663-76.
5. Okita, K. et al. (2007) *Nature* 448, 313-7.
6. Yu, J. et al. (2007) *Science* 318, 1917-20.

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