

StemLight™ Pluripotency Transcription Factor Antibody Kit

✓ 1 Kit
(3 x 20 µl)



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For Research Use Only. Not For Use In Diagnostic Procedures.

Products Included	Product #	Quantity	IF-IC Dilution	Isotype
Oct-4A (C30A3) Rabbit mAb	2840	20 µl	1:400	Rabbit IgG
Sox2 (D6D9) XP® Rabbit mAb	3579	20 µl	1:400	Rabbit IgG
Nanog (D73G4) XP® Rabbit mAb	4903	20 µl	1:400	Rabbit IgG

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.

Specificity/Sensitivity: Nanog (D73G4) XP® Rabbit mAb detects endogenous levels of total Nanog protein. Oct-4A (C30A3) Rabbit mAb detects endogenous levels of total Oct-4A protein. Sox2 (D6D9) XP™ Rabbit mAb detects endogenous levels of total Sox2 protein.

Source/Purification: Monoclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of human Nanog protein, recombinant protein corresponding to the amino terminus of human Oct-4A, and a synthetic peptide corresponding to residues surrounding Gly179 of human Sox2.

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). Over-expression 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.

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at -20°C. *Do not aliquot the antibodies.*

Recommended Antibody Dilutions:

The kit components are preoptimized for parallel use in immunofluorescent analysis at a standard dilution, but components are also validated for use in other applications - please refer to individual data sheet information for application specific recommendations.

Please visit www.cellsignal.com for validation data and a complete listing of recommended companion products.

All components of this kit have been validated for reactivity with human protein, however some components also have additional species cross reactivities. Please see www.cellsignal.com for additional specificity/sensitivity information for individual kit components.