Revision 3

Store at -20C

#9092

StemLight™ iPS Cell Reprogramming Antibody Kit

1 Kit (6 x 20 microliters)

Cell Signaling TECHNOLOGY®

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Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
Oct-4A (C30A3) Rabbit mAb	2840	20 µl	45 kDa	Rabbit IgG
Sox2 (D6D9) XP® Rabbit mAb	3579	20 µl	35 kDa	Rabbit
Nanog (D73G4) XP® Rabbit mAb	4903	20 µl	42 kDa	Rabbit IgG
LIN28A (D84C11) XP® Rabbit mAb	3695	20 µl	26 kDa	Rabbit IgG
KLF4 Antibody	4038	20 µl	65 kDa	Rabbit
c-Myc (D84C12) Rabbit mAb	5605	20 µl	57-65 kDa	Rabbit IgG

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

Description

The StemLight® iPS cell Reprogramming Antibody Kit contains a panel of antibodies for the detection of various proteins, combinations of which have been used to reprogram somatic cells to Induced Pluripotent Stem (iPS) cells. The kit can be used to track efficiency of expression of the reprogramming factors following transfection, viral transduction and other means of protein delivery. 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). 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 transcrip- tional 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.
SSEA4, TRA-1-81 and TRA-1-60 antibodies recognize antigens expressed on the cell surface of all pluripotent cells. SSEA4 recognizes a glycolipid carbohydrate epitope (7). TRA-1-60(S) and TRA-1-81 antibodies recognize different proteoglycan epitopes on variants of the same protein, podocalyxin (8). These epitopes are neuraminadase sensitive and resistant, respectively. Reactivity of SSEA4, TRA-1-81 and TRA-1-60 antibodies with their respective cell surface markers are lost upon differentiation of pluripotent cells, corresponding with a loss of pluripotent potential (9).

Background References

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5. Okita, K. et al. (2007) *Nature* 448, 313-7.
6. Yu, J. et al. (2007) *Science* 318, 1917-20.
7. Henderson, J.K. et al. (2002) *Stem Cells* 20, 329-37.
8. Draper, J.S. et al. (2002) *J Anat* 200, 249-58.
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