Revision 2

Store at -20C

#9656

StemLight™ Pluripotency Antibody Kit

1 Kit (100 tests)

Cell Signaling TECHNOLOGY®

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

Kit Includes	Quantity	Applications	Dilution	Isotype
Oct-4A (C30A3) Rabbit mAb #94310	100 tests	IF-IC	1:200	Rabbit IgG
Sox2 (D6D9) Rabbit mAb #34516	100 tests	IF-IC	1:200	Rabbit IgG
Nanog (D73G4) XP® Rabbit mAb #99399	100 tests	IF-IC	1:200	Rabbit IgG
SSEA4 (MC813) Mouse mAb #43782	100 tests	IF-IC	1:200	Mouse IgG3
TRA-1-60(S) (TRA-1-60(S)) Mouse mAb #61220	100 tests	IF-IC	1:200	Mouse IgM
TRA-1-81 (TRA-1-81) Mouse mAb #83321	100 tests	IF-IC	1:200	Mouse IgM

Applications Key: IF-IC=Immunofluorescence (Immunocytochemistry)

Description

The StemLight® Pluripotency Antibody Kit contains a panel of antibodies for the detection of proteins that are specifically expressed in human pluripotent cells. The kit can be used to track the pluripotent potential of human embryonic stem (ES) or induced pluripotent (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. Enough reagents are provided for 100 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

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.
7. Henderson, J.K. et al. (2002) *Stem Cells* 20, 329-37.
8. Draper, J.S. et al. (2002) *J Anat* 200, 249-58.
9. Schopperle, W.M. and DeWolf, W.C. (2007) *Stem Cells* 25, 723-30.

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