SANTA CRUZ BIOTECHNO

SSEA-3 (631): sc-21703

BACKGROUND

Embryonic stem cells have the ability to remain undifferentiated and proliferate indefinitely *in vitro,* while maintaining the potential to differentiate into derivatives of all three embryonic germ layers. Undifferentiated human embryonal carcinoma (EC) cells are the stem cells of teratocarcinomas and are characterized by the expression of stage specific embryonic antigens SSEA-1 and SSEA-3, TRA-2-39, TRA-2-54 and the high molecular weight glycoproteins TRA-1-60 and TRA-1-81. In addition, SSEA-1, SSEA-3 and SSEA-4 are markers that characterize embryonic stem (ES) and embryonic germ (EG) cells. Specifically, undifferentiated cells from the human ES cell line H7 express SSEA-3, SSEA-4, TRA-1-60 and TRA-1-81, but not SSEA-1. Interferon induces expression of SSEA-3 and SSEA-4 in EC cells without inhibiting their growth or inducing their differentiation.

REFERENCES

1. Andrews, P.W., et al. 1982. Cell-surface antigens of a clonal human embryonal carcinoma cell line: morphological and antigenic differentiation in culture. Int. J. Cancer 29: 523-531.
2. Damjanov, I., et al. 1982. Immunohistochemical localization of murine stage-specific embryonic antigens in human testicular germ cell tumors. Am. J. Pathol. 108: 225-230.
3. Kannagi, R., et al. 1983. New globoseries glycosphingolipids in human teratocarcinoma reactive with the monoclonal antibody directed to a developmentally regulated antigen, stage-specific embryonic antigen 3. J. Biol. Chem. 258: 8934-8942.
4. Kannagi, R., et al. 1983. Stage-specific embryonic antigens (SSEA-3 and -4) are epitopes of a unique globo-series ganglioside isolated from human teratocarcinoma cells. EMBO J. 2: 2355-2361.
5. Andrews, P.W., et al. 1987. Human embryonal carcinoma cells and their differentiation in culture. Int. J. Androl. 10: 95-104.

SOURCE

SSEA-3 (631) is a rat monoclonal antibody raised against 4-8 cell stage mouse embryos.

PRODUCT

Each vial contains 200 µg IgM in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SSEA-3 (631) is available conjugated to agarose (sc-21703 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-21703 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; and to either phycoerythrin (sc-21703 PE), fluorescein (sc-21703 FITC) or Alexa Fluor® 488 (sc-21703 AF488) or Alexa Fluor® 647 (sc-21703 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

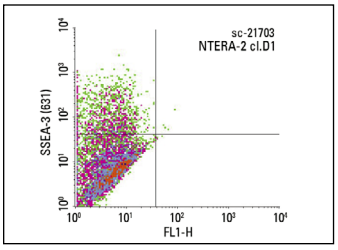
APPLICATIONS

SSEA-3 (631) is recommended for detection of SSEA-3 of mouse, rat and human origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

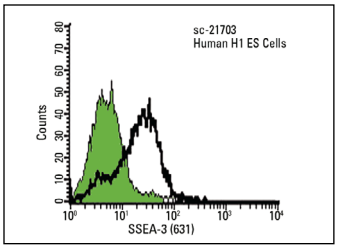
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



SSEA-3 (631): sc-21703. Indirect FCM analysis of live NTERA-2 cl.D1 cells stained with SSEA-3 (631), followed by PE-conjugated goat anti-rat IgM. Quadrant markers were set based on the isotype control, normal rat IgM: sc-3885.



SSEA-3 (631): sc-21703. Indirect FCM analysis of undifferentiated human H1 ES cells followed by FITC-conjugated goat anti-rat IgM. Black line histogram represents the isotype control. Kindly provided by Dr. T. Kawakami at La Jolla Institute for Allergy and Immunology.

SELECT PRODUCT CITATIONS

1. Kawasaki, H., et al. 2003. HES1 is a target of microRNA-23 during retinoic-acid-induced neuronal differentiation of NT2 cells. Nature 423: 838-841.
2. Strelchenko, N., et al. 2004. Morula-derived human embryonic stem cells. Reprod. Biomed. Online 9: 623-629.
3. Brons, I.G., et al. 2007. Derivation of pluripotent epiblast stem cells from mammalian embryos. Nature 448: 191-195.
4. Kopper, O., et al. 2010. Characterization of gastrulation-stage progenitor cells and their inhibitory crosstalk in human embryoid bodies. Stem Cells 28: 75-83.
5. Chang, T.C., et al. 2011. Derivation and characterization of novel nonhuman primate embryonic stem cell lines from *in vitro*-fertilized baboon preimplantation embryos. Stem Cells Dev. 20: 1053-1062.
6. Banerjee, E.R., et al. 2012. Human embryonic stem cells differentiated to lung lineage-specific cells ameliorate pulmonary fibrosis in a xenograft transplant mouse model. PLoS ONE 7: e33165.
7. Verma, V., et al. 2013. Dual kinase inhibition promotes pluripotency in finite bovine embryonic cell lines. Stem Cells Dev. 22: 1728-1742.
8. Benedetti, V., et al. 2018. Engineered kidney tubules for modeling patient-specific diseases and drug discovery. EBioMedicine 33: 253-268.
9. Ciampi, O., et al. 2018. Generation of two isogenic iPS cell lines (IRFMNi002-A and IRFMNi002-B) from a patient affected by focal segmental glomerulosclerosis carrying a heterozygous c.565G>A mutation in PAX2 gene. Stem Cell Res. 33: 175-179.

RESEARCH USE

For research use only, not for use in diagnostic procedures.