SANTA CRUZ BIOTECHNOLOGY, INC.

SSEA-4 (813-70): sc-21704

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. 1987. Human embryonal carcinoma cells and their differentiation in culture. Int. J. Androl. 10: 95-104.
2. Thomson, J.A., et al. 1995. Isolation of a primate embryonic stem cell line. Proc. Natl. Acad. Sci. USA 92: 7844-7848.

SOURCE

SSEA-4 (813-70) is a mouse monoclonal antibody raised against embryonal carcinoma cell line 2102Ep of human origin.

PRODUCT

Each vial contains 200 µg IgG_3 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SSEA-4 (813-70) is available conjugated to agarose (sc-21704 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-21704 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; and to either phycoerythrin (sc-21704 PE), fluorescein (sc-21704 FITC), Alexa Fluor® 488 (sc-21704 AF488) or Alexa Fluor® 647 (sc-21704 AF647), 200 µg/ml, for IF, IHC(P) and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

SSEA-4 (813-70) is recommended for detection of SSEA-4 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); non cross-reactive with undifferentiated murine EC, ES and EG cells.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941or UltraCruz® Hard-set Mounting Medium: sc-359850.

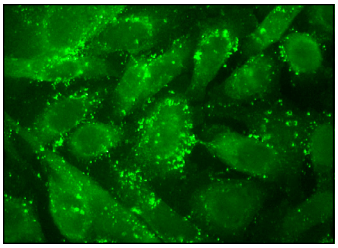
STORAGE

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

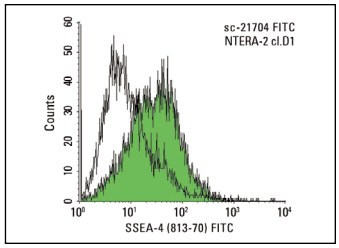
RESEARCH USE

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

DATA



SSEA-4 (813-70) FITC: sc-21704 FITC. Direct immunofluorescence staining of formalin-fixed SW480 cells showing membrane localization. Blocked with UltraCruz® Blocking Reagent: sc-516214.



SSEA-4 (813-70): sc-21704. Indirect FCM analysis of live NTERA-2 cl.D1 cells stained with SSEA-4 (813-70), followed by FITC-conjugated goat anti-mouse IgG_3-FITC: sc-2081.

SELECT PRODUCT CITATIONS

1. Strelchenko, N., et al. 2004. Morula-derived human embryonic stem cells. Reprod. Biomed. Online 9: 623-629.
2. Qu, X., et al. 2012. Induced pluripotent stem cells generated from human adipose-derived stem cells using a non-viral polycistronic plasmid in feeder-free conditions. PLoS ONE 7: e48161.
3. Smagghe, B.J., et al. 2013. MUC1* ligand, NM23-H1, is a novel growth factor that maintains human stem cells in a more naïve state. PLoS ONE 8: e58601.
4. Mallon, B.S., et al. 2014. Comparison of the molecular profiles of human embryonic and induced pluripotent stem cells of isogenic origin. Stem Cell Res. 12: 376-386.
5. Liu, J., et al. 2015. Efficient episomal reprogramming of blood mononuclear cells and differentiation to hepatocytes with functional drug metabolism. Exp. Cell Res. 338: 203-213.
6. Afanassieff, M., et al. 2016. Generation of induced pluripotent stem cells in rabbits. Methods Mol. Biol. 1357: 149-172.
7. Yoshioka, N. and Dowdy, S.F. 2017. Enhanced generation of iPSCs from older adult human cells by a synthetic five-factor self-replicative RNA. PLoS ONE 12: e0182018.
8. Fu, S., et al. 2018. Generation of human-induced pluripotent stem cells from burn patient-derived skin fibroblasts using a non-integrative method. Int. J. Mol. Med. 41: 87-94.
9. Xu, J., et al. 2019. Generation of a human Charcot-Marie-Tooth disease type 1B (CMT1B) iPSC line, ZJUCHi001-A, with a mutation of c.292C>T in MPZ. Stem Cell Res. 35: 101407.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.