SANTA CRUZ BIOTECHNOLOGY, INC.

SSEA-4 (MC813): sc-59368

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.
3. Thomson, J.A., et al. 1996. Pluripotent cell lines derived from common marmoset *(Callithrix jacchus)* blastocysts. Biol. Reprod. 55: 254-259.

SOURCE

SSEA-4 (MC813) 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 (MC813) is available conjugated to agarose (sc-59368 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; and to phycoerythrin (sc-59368 PE), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

APPLICATIONS

SSEA-4 (MC813) 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: 1) 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-24941 or 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.

SELECT PRODUCT CITATIONS

1. d'Aquino, R., et al. 2011. Human neural crest-derived postnatal cells exhibit remarkable embryonic attributes either *in vitro* or *in vivo*. Eur. Cell. Mater. 21: 304-316.
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3. Matsumoto, S., et al. 2015. A cytotoxic antibody recognizing lacto-N-fucopentaose I (LNFP I) on human induced pluripotent stem (hiPS) cells. J. Biol. Chem. 290: 20071-20085.
4. Mihaila, S.M., et al. 2017. Interactive endothelial phenotype maintenance and osteogenic differentiation of adipose tissue stromal vascular fraction SSEA-4^+-derived cells. J. Tissue Eng. Regen. Med. 11: 1998-2013.
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6. Varga, E., et al. 2017. Establishment of an induced pluripotent stem cell (iPSC) line from a 9-year old male with autism spectrum disorder (ASD). Stem Cell Res. 21: 19-22.
7. Roost, M.S., et al. 2017. DNA methylation and transcriptional trajectories during human development and reprogramming of isogenic pluripotent stem cells. Nat. Commun. 8: 908.
8. Gonçalves, A.I., et al. 2018. Human adipose tissue-derived Tenomodulin positive subpopulation of stem cells: a promising source of tendon progenitor cells. J. Tissue Eng. Regen. Med. 12: 762-774.
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10. Ye, H. and Wang, Q. 2018. Efficient generation of non-integration and feeder-free induced pluripotent stem cells from human peripheral blood cells by Sendai virus. Cell. Physiol. Biochem. 50: 1318-1331.
11. Yasuda, S.Y., et al. 2018. Chemically defined and growth-factor-free culture system for the expansion and derivation of human pluripotent stem cells. Nat. Biomed. Eng. 2: 173-182.
12. Tangprasittipap, A., et al. 2019. Generation of a human induced pluripotent stem cell line (MUi010-A) from skin fibroblast of patient carrying a c.2104C>T mutation in MYH9 gene. Stem Cell Res. 36: 101397.
13. Zou, T., et al. 2019. Organoid-derived c-Kit^+/$SSEA4^-$ human retinal progenitor cells promote a protective retinal microenvironment during transplantation in rodents. Nat. Commun. 10: 1205.