SANTA CRUZ BIOTECHNOLOGY, INC.

SSEA-1 (MC-480): sc-101462

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. Specifi-cally, 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.

SOURCE

SSEA-1 (MC-480) is a mouse monoclonal antibody raised against X-irradiated F9 teratocarcinoma stem cells of human origin.

PRODUCT

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

SSEA-1 (MC-480) is available conjugated to either phycoerythrin (sc-101462 PE) or fluorescein (sc-101462 FITC), 200 µg/ml, for IF, IHC(P) and FCM.

APPLICATIONS

SSEA-1 (MC-480) is recommended for detection of SSEA-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

Molecular Weight of SSEA-1: 220 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) 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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

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. Cho, H.J., et al. 2010. Induction of pluripotent stem cells from adult somatic cells by protein-based reprogramming without genetic manipulation. Blood 116: 386-395.
2. Gong, G., et al. 2010. Culture conditions and enzymatic passaging of bovine ESC-like cells. Cell. Reprogram. 12: 151-160.
3. Fauzi, I., et al. 2012. Enhanced hematopoietic differentiation toward erythrocytes from murine embryonic stem cells with Hep G2-conditioned medium. Stem Cells Dev. 21: 3152-3161.
4. Naeemipour, M., et al. 2013. Expression dynamics of pluripotency genes in chicken primordial germ cells before and after colonization of the genital ridges. Mol. Reprod. Dev. 80: 849-861.
5. Guo, X., et al. 2013. microRNA-29b is a novel mediator of Sox2 function in the regulation of somatic cell reprogramming. Cell Res. 23: 142-156.
6. Díez-Torre, A., et al. 2013. Evidence for a role of matrix metalloproteinases and their inhibitors in primordial germ cell migration. Andrology 1: 779-786.
7. Soltanian, S., et al. 2014. Expression analysis of BORIS during pluripotent, differentiated, cancerous, and non-cancerous cell states. Acta Biochim. Biophys. Sin. 46: 647-658.
8. Wei, T., et al. 2015. An HDAC2-TET1 switch at distinct chromatin regions significantly promotes the maturation of pre-iPS to iPS cells. Nucleic Acids Res. 43: 5409-5422.
9. Zhou, Q., et al. 2015. Establishment of a proteome profile and identification of molecular markers for mouse spermatogonial stem cells. J. Cell. Mol. Med. 19: 521-534.
10. Sisakhtnezhad, S., et al. 2015. The molecular signature and spermatogenesis potential of newborn chicken spermatogonial stem cells *in vitro.* In Vitro Cell. Dev. Biol. Anim. 51: 415-425.
11. Camargos, B.M., et al. 2015. BMP-4 increases activin A gene expression during osteogenic differentiation of mouse embryonic stem cells. Growth Factors 33: 133-138.
12. Ou, L., et al. 2016. Dickkopf Wnt signaling pathway inhibitor 1 regulates the differentiation of mouse embryonic stem cells *in vitro* and *in vivo.* Mol. Med. Rep. 13: 720-730.

PROTOCOLS

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