

SSEA-1 (480): sc-21702



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.

CHROMOSOMAL LOCATION

Genetic locus: FUT4 (human) mapping to 11q21; Fut4 (mouse) mapping to 9 A2.

SOURCE

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

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 (480) is available conjugated to agarose (sc-21702 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-21702 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; and to either phycoerythrin (sc-21702 PE), fluorescein (sc-21702 FITC) or Alexa Fluor® 488 (sc-21702 AF488) or Alexa Fluor® 647 (sc-21702 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

In addition, SSEA-1 (480) is available conjugated to either PerCP (sc-21702 PerCP), PerCP-Cy5.5 (sc-21702 PCPC5) or Alexa Fluor® 405 (sc-21702 AF405), 100 tests in 2 ml, for IF, IHC(P) and FCM.

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

APPLICATIONS

SSEA-1 (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 10⁶ cells).

Molecular Weight of SSEA-1: 220 kDa.

Positive Controls: human liver extract: sc-363766 or mouse kidney extract: sc-2255.

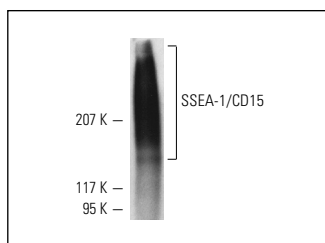
STORAGE

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

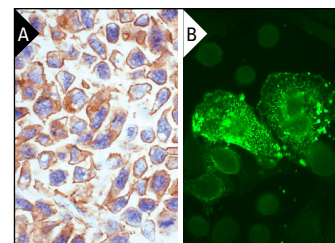
RESEARCH USE

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

DATA



SSEA-1 (480): sc-21702. Western blot analysis of SSEA-1 expression in mouse kidney tissue extract.



SSEA-1 (480): sc-21702. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human liver tissue showing membrane staining (A). SSEA-1 (480) Alexa Fluor® 488: sc-21702 AF488. Direct immunofluorescence staining of formalin-fixed SW480 cells showing membrane localization in a subset of cells. Blocked with UltraCruz® Blocking Reagent: sc-516214 (B).

SELECT PRODUCT CITATIONS

1. Ward, C.M., et al. 2003. The 5T4 oncofoetal antigen is an early differentiation marker of mouse ES cells and its absence is a useful means to assess pluripotency. *J. Cell Sci.* 116: 4533-4542.
2. Ma, Y., et al. 2015. Functional screen reveals essential roles of miR-27a/24 in differentiation of embryonic stem cells. *EMBO J.* 34: 361-378.
3. Silva Dos Santos, D., et al. 2018. Embryonic stem cell-derived cardiomyocytes for the treatment of doxorubicin-induced cardiomyopathy. *Stem Cell Res. Ther.* 9: 30.
4. Ye, B., et al. 2018. Klf4 glutamylation is required for cell reprogramming and early embryonic development in mice. *Nat. Commun.* 9: 1261.
5. Liu, W., et al. 2018. Alterations of protein glycosylation in embryonic stem cells during adipogenesis. *Int. J. Mol. Med.* 41: 293-301.
6. Ye, B., et al. 2018. LncKdm2b controls self-renewal of embryonic stem cells via activating expression of transcription factor Zbtb3. *EMBO J.* 37: pii: e97174.
7. Asumda, F.Z., et al. 2018. Differentiation of hepatocyte-like cells from human pluripotent stem cells using small molecules. *Differentiation* 101: 16-24.
8. Xu, X., et al. 2018. Telomeric noncoding RNA promotes mouse embryonic stem cell self-renewal through inhibition of Tcf3 activity. *Am. J. Physiol., Cell Physiol.* 314: C712-C720.
9. Ma, H., et al. 2018. hsa-miR-93 regulates MUCIN family gene expression via WNT/β-catenin pathway in intrahepatic stone disease. *Clin. Res. Hepatol. Gastroenterol.* pii: S2210-7401(18)30073-1.

PROTOCOLS

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