SANTA CRUZ BIOTECHNOLOGY, INC.

TRA-1-81 (TRA-1-80): sc-21706

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 embry-onal carcinoma (EC) cells are the stem cells of teratocarcinomas and are char-acterized by the expression of stage specific embryonic antigens SSEA-1 and SSEA-3, the high molecular weight glycoproteins TRA-1-60 and TRA-1-81, as well as TRA-2-39 and TRA-2-54. Monoclonal antibodies TRA-2-49 and TRA-2-54 also recognize the liver isozyme of alkaline phosphatase expressed by human EC cells. TRA-1-60 antigen was originally identified as a teratocarcinoma mucin-like antigen expressed on the surface of EC progenitor cells. TRA-1-60 is also characterized as a tumor marker for embryonal carcinoma positive NSTGCT (nonseminomatous testicular germ cell tumors) and is coexpressed with TRA-1-81 and the SSEAs on the membrane of a considerable number of stem cells.

REFERENCES

1. Andrews, P.W., et al. 1987. Human embryonal carcinoma cells and their differentiation in culture. Int. J. Androl. 10: 95-104.
2. Marrink, J., et al. 1991. TRA-1-60: a new serum marker in patients with germ-cell tumors. Int. J. Cancer 49: 368-372.

CHROMOSOMAL LOCATION

Genetic locus: PODXL (human) mapping to 7q32.3.

SOURCE

TRA-1-81 (TRA-1-80) is a mouse monoclonal antibody raised against 2102Ep human embryonal carcinoma 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.

TRA-1-81 (TRA-1-80) is available conjugated to Alexa Fluor® 647 (sc-21706 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

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

APPLICATIONS

TRA-1-81 (TRA-1-80) is recommended for detection of TRA-1-81 of 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) and flow cytometry (1 µg per 1 x 10^6 cells).

Positive Controls: NTERA-2 cl.D1 whole cell lysate: sc-364181, ECV304 cell lysate: sc-2269 or Raji whole cell lysate: sc-364236.

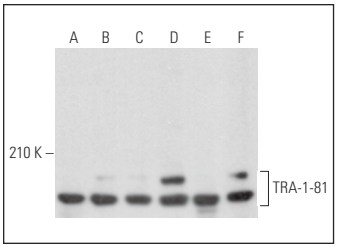
STORAGE

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

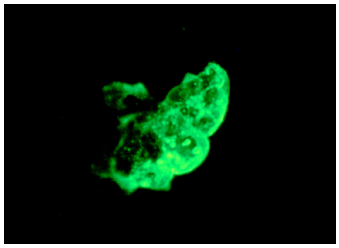
RESEARCH USE

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

DATA



TRA-1-81 (TRA-1-80): sc-21706. Western blot analysis of TRA-1-81 expression in ECV304 (**A**), Raji (**B**), MIA PaCa-2 (**C**), HeLa (**D**), Jurkat (**E**) and NTERA-2 cl.D1 (**F**) whole cell lysates.



TRA-1-81 (TRA-1-80): sc-21706. Immunofluorescence staining of methanol-fixed NTERA-2 cl.D1 cells showing membrane localization.

SELECT PRODUCT CITATIONS

1. Inzunza, J., et al. 2004. Comparative genomic hybridization and karyotyping of human embryonic stem cells reveals the occurrence of an isodicentric X chromosome after long-term cultivation. Mol. Hum. Reprod. 10: 461-466.
2. Liao, X., et al. 2013. Matched miRNA and mRNA signatures from an hESC-based *in vitro* model of pancreatic differentiation reveal novel regulatory interactions. J. Cell Sci. 126: 3848-3861.
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. Questa, M., et al. 2016. Generation of iPSC line iPSC-FH2.1 in hypoxic conditions from human foreskin fibroblasts. Stem Cell Res. 16: 300-303.
5. Bharathan, S.P., et al. 2017. Systematic evaluation of markers used for the identification of human induced pluripotent stem cells. Biol. Open 6: 100-108.
6. Asumda, F.Z., et al. 2018. Differentiation of hepatocyte-like cells from human pluripotent stem cells using small molecules. Differentiation 101: 16-24.
7. 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.
8. Hiramoto, T., et al. 2020. Non-transmissible MV vector with segmented RNA genome establishes different types of iPSCs from hematopoietic cells. Mol. Ther. 28: 129-141.
9. Liu, N., et al. 2021. PBMC-derived integration-free iPSCs line SDQLCHi039-A from a patient with X-linked agammaglobulinemia carrying a novel 9-bp in-frame deletion in BTK gene. Stem Cell Res. 51: 102165.

PROTOCOLS

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