SANTA CRUZ BIOTECHNOLOGY, INC.

EMP-3 (h): 293 Lysate: sc-111244

BACKGROUND

EMP-3 (epithelial membrane protein 3), also known as YMP, is a 163 amino acid multi-pass membrane protein that contains two N-linked glycosylation sites and four transmembrane domains. Expressed ubiquitously with highest expression in peripheral blood leukocytes, EMP-3 is a myelin-related protein that is thought to be involved in cell-cell interactions and cell proliferation. The gene encoding EMP-2 is implicated as a possible tumor suppressor that silences CpG promotor action, thereby inhibiting the growth of neuroblastomas and gliomas. Overexpression of EMP-3, however, may be associated with the development of oligodendroglial tumors (tumors that develop on the myelin producing cells of the central nervous system). Its ability to both repress and induce tumor formation suggests that normal amounts of EMP-3 keep tumor activity low, while increased EMP-3 expression may play a role in carcinogenesis.

REFERENCES

1. Taylor, V. and Suter, U. 1996. Epithelial membrane protein-2 and epithelial membrane protein-3: two novel members of the peripheral myelin protein 22 gene family. Gene 175: 115-120.
2. Ben-Porath, I. and Benvenisty, N. 1996. Characterization of a tumor-associated gene, a member of a novel family of genes encoding membrane glycoproteins. Gene 183: 69-75.
3. Liehr, T., Kuhlenbäumer, G., Wulf, P., Taylor, V., Suter, U., Van Broeckhoven, C., Lupski, J.R., Claussen, U. and Rautenstrauss, B. 1999. Regional localization of the human epithelial membrane protein genes 1, 2, and 3 (EMP1, EMP2, EMP3) to 12p12.3, 16p13.2, and 19q13.3. Genomics 58: 106-108.
4. Luedtke, B., Pooler, L.M., Choi, E.Y., Tranchita, A.M., Reinbold, C.J., Brown, A.C., Shaffer, D.J., Roopenian, D.C. and Malarkannan, S. 2003. A single nucleotide polymorphism in the Emp3 gene defines the H4 minor histocompatibility antigen. Immunogenetics 55: 284-295.
5. Knuepfer, E., Rug, M., Klonis, N., Tilley, L. and Cowman, A.F. 2005. Trafficking determinants for PfEMP3 export and assembly under the *Plasmodium falciparum*-infected red blood cell membrane. Mol. Microbiol. 58: 1039-1053.
6. Nielsen, K., Heegaard, S., Vorum, H., Birkenkamp-Demtröder, K., Ehlers, N. and Orntoft, T.F. 2005. Altered expression of CLC, DSG3, EMP3, S100A2, and SLPI in corneal epithelium from keratoconus patients. Cornea 24: 661-668.
7. Alaminos, M., Dávalos, V., Ropero, S., Setién, F., Paz, M.F., Herranz, M., Fraga, M.F., Mora, J., Cheung, N.K., Gerald, W.L. and Esteller, M. 2005. EMP3, a myelin-related gene located in the critical 19q13.3 region, is epigenetically silenced and exhibits features of a candidate tumor suppressor in glioma and neuroblastoma. Cancer Res. 65: 2565-2571.
8. Kunitz, A., Wolter, M., van den Boom, J., Felsberg, J., Tews, B., Hahn, M., Benner, A., Sabel, M., Lichter, P., Reifenberger, G., von Deimling, A. and Hartmann, C. 2007. DNA hypermethylation and aberrant expression of the EMP3 gene at 19q13.3 in Human Gliomas. Brain Pathol. 17: 363-370.

CHROMOSOMAL LOCATION

Genetic locus: EMP3 (human) mapping to 19q13.33.

PRODUCT

EMP-3 (h): 293 Lysate represents a lysate of human EMP-3 transfected 293 cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

EMP-3 (h): 293 Lysate is suitable as a Western Blotting positive control for human reactive EMP-3 antibodies. Recommended use: 10-20 µl per lane.

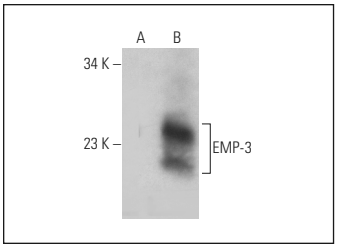
Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-transfected 293 cells.

EMP-3 (SW-5): sc-81797 is recommended as a positive control antibody for Western Blot analysis of enhanced human EMP-3 expression in EMP-3 transfected 293 cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



EMP-3 (SW-5): sc-81797. Western blot analysis of EMP-3 expression in non-transfected: sc-110760 (**A**) and human EMP-3 transfected: sc-111244 (**B**) 293 whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

RESEARCH USE

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

PROTOCOLS

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