

EMP-3 (SW-5): sc-81797

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 promoter 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.

CHROMOSOMAL LOCATION

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

SOURCE

EMP-3 (SW-5) is a mouse monoclonal antibody raised against recombinant EMP-3 of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

EMP-3 (SW-5) is recommended for detection of EMP-3 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for EMP-3 siRNA (h): sc-97634, EMP-3 shRNA Plasmid (h): sc-97634-SH and EMP-3 shRNA (h) Lentiviral Particles: sc-97634-V.

Molecular Weight of EMP-3: 18 kDa.

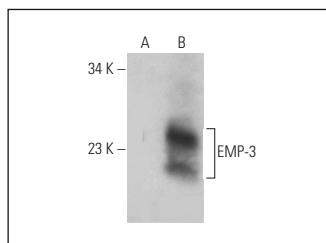
Positive Controls: C32 whole cell lysate: sc-2205 or EMP-3 (h): 293 Lysate: sc-111244.

RECOMMENDED SUPPORT REAGENTS

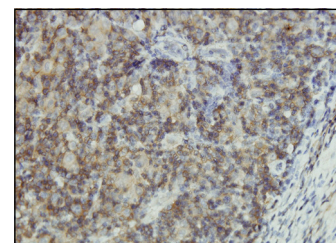
To ensure optimal results, the following support reagents are recommended:

- 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 A/G PLUS-Agarose: sc-2003 (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.

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.



EMP-3 (SW-5): sc-81797. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human lymphoma tissue showing membrane localization.

SELECT PRODUCT CITATIONS

1. Lin, S., et al. 2020. Prognosis analysis and validation of m⁶A signature and tumor immune microenvironment in glioma. *Front. Oncol.* 10: 541401.
2. Cha, Y.J. and Koo, J.S. 2020. Expression and role of epithelial membrane proteins in tumorigenesis of hormone receptor-positive breast cancer. *J. Breast Cancer* 23: 385-397.
3. Cha, Y.J. and Koo, J.S. 2020. Expression of EMP-1, EMP-2, and EMP-3 in breast phyllodes tumors. *PLoS ONE* 15: e0238466.
4. Zhang, A., et al. 2021. Establishment of a nomogram with EMP-3 for predicting clinical outcomes in patients with glioma: a bi-center study. *CNS Neurosci. Ther.* 27: 1238-1250.
5. Dong, J., et al. 2023. Integrated analysis of genome-wide DNA methylation and cancer-associated fibroblasts identified prognostic biomarkers and immune checkpoint blockade in lower grade gliomas. *Front. Oncol.* 12: 977251.

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.