SANTA CRUZ BIOTECHNOLOGY, INC.

β-FR (4B12): sc-293199

BACKGROUND

Folate is an essential vitamin that must be obtained from food intake through intestinal absorption in mammals. Folate and reduced folic acid derivatives bind to the folate receptor (FR) family, which mediates the endocytosis of 5-methyltetrahydofolate into the cell. The folate receptors consist of five members, α, β, γ, γ' (which is produced by alternative splicing) and δ. α-FR and β-FR are attached to the membrane by a GPI anchor and are expressed in malignant tissues of epithelial and nonepithelial origin, respectively. γ-FR is expressed in tissues of hematopoietic origin, such as spleen, thymus and bone marrow, but the expression pattern of δ-FR is elusive, which suggests that it is highly restricted both spatially and temporally. α-FR is used as a highly selective tumor marker and may be targeted for the delivery of therapeutic compounds to tumor cells by coupling to derivatives of folic acid.

REFERENCES

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2. Shen, F., et al. 1995. Folate receptor type γ is primarily a secretory protein due to lack of an efficient signal for glycosylphosphatidylinositol modification: protein characterization and cell type specificity. Biochemistry 34: 5660-5665.
3. Wang, H., et al. 1998. Structure and regulation of a polymorphic gene encoding folate receptor type γ/γ'. Nucleic Acids Res. 26: 2132-2142.
4. Said, H.M., et al. 2000. Adaptive regulation of intestinal folate uptake: effect of dietary folate deficiency. Am. J. Physiol., Cell Physiol. 279: C1889-C1895.
5. Spiegelstein, O., et al. 2000. Identification of two putative novel folate receptor genes in humans and mouse. Gene 258: 117-125.
6. Wang, H., et al. 2000. Differentiation-independent retinoid induction of folate receptor type β, a potential tumor target in myeloid leukemia. Blood 96: 3529-3536.
7. Sudimack, J., et al. 2000. Targeted drug delivery via the folate receptor. Adv. Drug Deliv. Rev. 41: 147-162.
8. Zhu, W.Y., et al. 2001. The rate of folate receptor α (FRα) synthesis in folate depleted CHL cells is regulated by a translational mechanism sensitive to media folate levels, while stable overexpression of its mRNA is mediated by gene amplification and an increase in transcript half-life. J. Cell. Biochem. 81: 205-219.

CHROMOSOMAL LOCATION

Genetic locus: FOLR2 (human) mapping to 11q13.4.

SOURCE

β-FR (4B12) is a mouse monoclonal antibody raised against amino acids 36-128 of β-FR of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

β-FR (4B12) is recommended for detection of β-FR 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

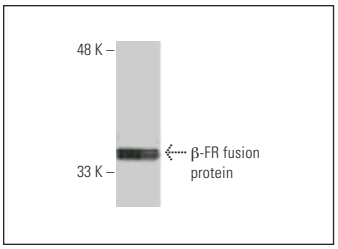
Suitable for use as control antibody for β-FR siRNA (h): sc-39971, β-FR shRNA Plasmid (h): sc-39971-SH and β-FR shRNA (h) Lentiviral Particles: sc-39971-V.

Molecular Weight of mature glycosylated β-FR: 36-38 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 A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



β-FR (4B12): sc-293199. Western blot analysis of human recombinant β-FR fusion protein.

STORAGE

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

PROTOCOLS

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