

## FR (E-11): sc-515521

### 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-methyltetrahydrofolate into the cell. The folate receptors consist of five members,  $\alpha$ ,  $\beta$ ,  $\gamma$ ,  $\gamma'$  (which is produced by alternative splicing) and  $\delta$ .  $\alpha$ -FR and  $\beta$ -FR are attached to the membrane by a GPI anchor and are expressed in malignant tissues of epithelial and nonepithelial origin, respectively.  $\gamma$ -FR is expressed in tissues of hematopoietic origin, such as spleen, thymus and bone marrow, but the expression pattern of  $\delta$ -FR is elusive, which suggests that it is highly restricted both spatially and temporally.  $\alpha$ -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.

### CHROMOSOMAL LOCATION

Genetic locus: FOLR1/FOLR2/FOLR3 (human) mapping to 11q13.4; Folr1/Folr2 (mouse) mapping to 7 E3.

### SOURCE

FR (E-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 210-231 near the C-terminus of FR of human origin.

### PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

FR (E-11) is available conjugated to agarose (sc-515521 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515521 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515521 PE), fluorescein (sc-515521 FITC), Alexa Fluor<sup>®</sup> 488 (sc-515521 AF488), Alexa Fluor<sup>®</sup> 546 (sc-515521 AF546), Alexa Fluor<sup>®</sup> 594 (sc-515521 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-515521 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-515521 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-515521 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-515521 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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### APPLICATIONS

FR (E-11) is recommended for detection of  $\alpha$ -FR,  $\beta$ -FR and  $\gamma$ -FR of human origin and  $\alpha$ -FR, and  $\beta$ -FR of mouse and rat origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

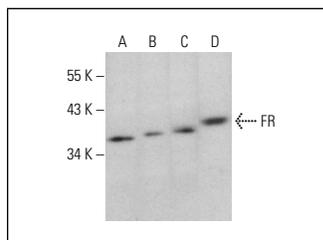
Molecular Weight of mature FR glycoprotein: 36-39 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Hep G2 cell lysate: sc-2227 or JAR cell lysate: sc-2276.

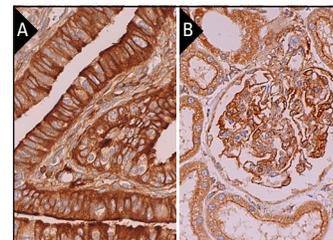
### RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

### DATA



FR (E-11): sc-515521. Western blot analysis of FR expression in JAR (A), MCF7 (B), HeLa (C) and Hep G2 (D) whole cell lysates.



FR (E-11): sc-515521. Immunoperoxidase staining of formalin fixed, paraffin-embedded human fallopian tube tissue showing membrane and cytoplasmic staining of glandular cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing membrane and cytoplasmic staining of cells in glomeruli and cells in tubules (B).

### SELECT PRODUCT CITATIONS

- Sambi, M., et al. 2019. Next-generation multimodality of nanomedicine therapy: size and structure dependence of folic acid conjugated copolymers actively target cancer cells in disabling cell division and inducing apoptosis. *Cancers* 11: 1698.
- Cambria, M.T., et al. 2020. The interplay between Fe<sub>3</sub>O<sub>4</sub> superparamagnetic nanoparticles, sodium butyrate, and folic acid for intracellular transport. *Int. J. Mol. Sci.* 21: 8473.
- Grigoletto, A., et al. 2021. Folic acid-targeted paclitaxel-polymer conjugates exert selective cytotoxicity and modulate invasiveness of colon cancer cells. *Pharmaceutics* 13: 929.
- Mi, X., et al. 2021. Folic acid decorated zeolitic imidazolate framework (ZIF-8) loaded with baicalin as a nano-drug delivery system for breast cancer therapy. *Int. J. Nanomedicine* 16: 8337-8352.

### 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.