Human FOLR1 Antibody

Monoclonal Mouse IgG_1 Clone # 548908

Catalog Number: MAB5646

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human FOLR1 in direct ELISAs and Western blots. In direct ELISAs, no cross-reactivity with recombinant human FOLR2, 3 or 4 is observed.
Source	Monoclonal Mouse IgG_1 Clone # 548908
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant human FOLR1 Arg25-Met233 Accession # P15328
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose.

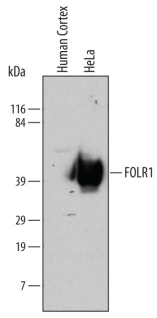
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	2 µg/mL	See Below
Flow Cytometry	0.25 µg/10^6 cells	See Below
Immunocytochemistry	8-25 µg/mL	See Below
Human FOLR1 Sandwich Immunoassay		**Reagent**
ELISA Capture	2-8 µg/mL	Human FOLR1 Antibody (Catalog # MAB5646)
ELISA Detection	0.1-0.4 µg/mL	Human FOLR1 Biotinylated Antibody (Catalog # BAF5646)
Standard		Recombinant Human FOLR1 (Catalog # 5646-FR)
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	
Knockout Validated	FOLR1 is specifically detected in MCF-7 human breast cancer parental cell line but is not detectable in FOLR1 knockout MCF-7 cell line.	

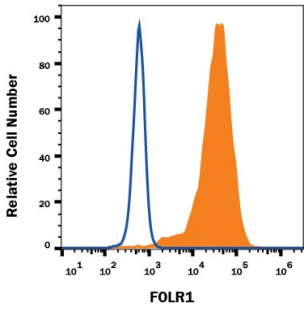
DATA

Western Blot



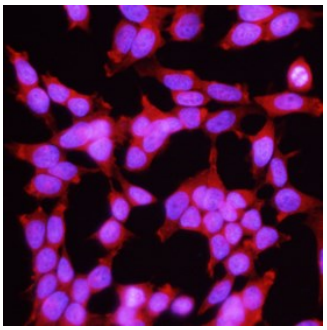
Detection of Human FOLR1 by Western Blot. Western blot shows lysates of human cortex tissue and HeLa human cervical epithelial carcinoma cell line. PVDF membrane was probed with 2 µg/mL of Mouse Anti-Human FOLR1 Monoclonal Antibody (Catalog # MAB5646) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007). A specific band was detected for FOLR1 at approximately 40 kDa (as indicated). This experiment was conducted using Immunoblot Buffer Group 1. Use under non-reducing conditions only.

Flow Cytometry



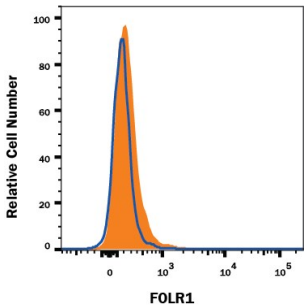
Detection of FOLR1 in MCF-7 Human Cell Line by Flow Cytometry. MCF-7 human breast cancer cell line was stained with Mouse Anti-Human FOLR1 Monoclonal Antibody (Catalog # MAB5646, filled histogram) or isotype control antibody (Catalog # MAB002, open histogram), followed by Phycoerythrin-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # F0102B). View our protocol for Staining Membrane-associated Proteins.

Immunocytochemistry



FOLR1 in MCF-7 Human Cell Line. FOLR1 was detected in immersion fixed MCF-7 human breast cancer cell line using 10 µg/mL Mouse Anti-Human FOLR1 Monoclonal Antibody (Catalog # MAB5646) for 3 hours at room temperature. Cells were stained with the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

Knockout Validated



FOLR1 Specificity is Shown by Flow Cytometry in Knockout Cell Line. FOLR1 knockout MCF-7 human breast cancer cell line was stained with Mouse Anti-Human FOLR1 Monoclonal Antibody (Catalog # MAB5646, filled histogram) or isotype control antibody (Catalog # MAB002, open histogram) followed by anti-Mouse IgG PE-conjugated secondary antibody (Catalog # F0102B). No staining in the FOLR1 knockout MCF-7 cell line was observed. View our protocol for Staining Membrane-associated Proteins.

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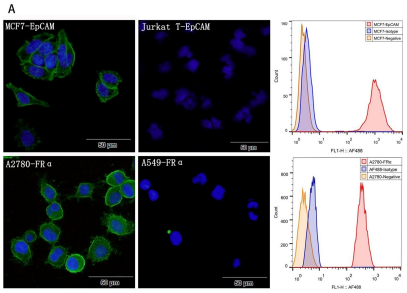
Human FOLR1 Antibody

Monoclonal Mouse IgG_1 Clone # 548908

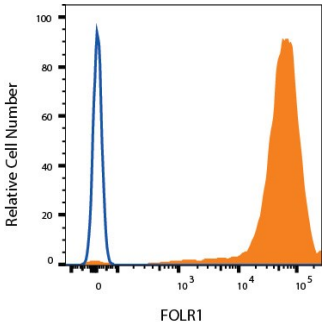
Catalog Number: MAB5646

Immunocytochemistry/ Immunofluorescence



Detection of Human FOLR1 by Immunocytochemistry/Immunofluorescence (A) Immunofluorescent (left) and flow cytometry (right) detection of the EpCAM expression in MCF7 cells and the FRα expression in A2780 cells. EpCAM and FRα stained with Alexa Fluor® 488 are green at an excitation of 488 nm, and the nuclei stained with DAPI are blue at an excitation of 405 nm. As a negative control, we used EpCAM to stain Jurkat cells, which are EpCAM negatively expressed, and we used FRα to stain A549 cells, which are FRα negatively expressed. Histograms of flow cytometric analysis: MCF7 cells (top) were stained with anti-EpCAM antibodies (red) and A2780 cells (bottom) were stained with anti-FRα antibodies (red), the negative control was autofluorescent (orange), and the isotype was mouse IgG plus secondary antibody (blue). (B) Schematic of our CTCs enrichment strategy. Anti-EpCAM-MNs and Anti-FRα-MNs was added to the whole blood and after incubation, magnetic separation and fluorescence identification, the cells of DAPI+/CK+/CD45− were defined as CTC. Image collected and cropped by CiteAb from the following publication (https://pubmed.ncbi.nlm.nih.gov/29352248), licensed under a CC-BY license. Not internally tested by R&D Systems.

Flow Cytometry



Detection of FOLR1 in HeLa cells by Flow Cytometry HeLa cells were stained with Mouse Anti-Human FOLR1 Monoclonal Antibody (Catalog # MAB5646, filled histogram) or isotype control antibody (Catalog # MAB002, open histogram) followed by Phycoerythrin-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # F0102B). View our protocol for Staining Membrane-associated Proteins.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Folate Receptor 1 (FOLR1), also known as Folate Receptor alpha and Folate Binding Protein (FBP), is a 37-42 kDa protein that mediates the cellular uptake of folic acid and reduced folates. Dietary folates are required for many key metabolic processes including nucleotide and methionine synthesis, the interconversion of glycine and serine, and histidine breakdown (1, 2). Mature FOLR1 is an N-glycosylated protein that is anchored to the cell surface by a GPI linkage (3-6). Human FOLR1 shares 83% amino acid sequence identity with mouse and rat FOLR1. FOLR1 is predominantly expressed on epithelial cells and is dramatically up-regulated on many carcinomas (7, 8). It is critically required during early embryogenesis as shown in knockout mice which die *in utero* with gross morphological defects (9). FOLR1 is internalized to the endosomal system where it dissociates from its ligand before recycling to the cell surface (6, 10). A soluble form of FOLR1 can be proteolytically shed from the cell surface into the serum and breast milk (11).

References:

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