[0107] In some embodiments, an antibody, antigen-binding fragment, polypeptide, or composition provided herein is for use as a diagnostic.

[0108] In some embodiments, an antibody, antigen-binding fragment, polypeptide, or composition provided herein is for use in a method for diagnosing cancer in a patient suffering therefrom. In some embodiments, the cancer is associated with elevated levels of FOLR1.

[0109] In some embodiments, the binding affinity of an antibody, antigen-binding fragment, or polypeptide is a binding affinity obtained in Example 3 and/or shown in Figure 4, 5, and/or 6.

BRIEF DESCRIPTIONS OF THE DRAWINGS

[0110] Figure 1 provides images of IHC staining of NSCLC and ovarian endometrioid adenocarcinoma samples using the 353.2-1 and 353.9-20 antibodies.

[0111] Figure 2 provides images of IHC staining of normal salivary gland and pancreas samples using the 353.2-1 and 353.9-20 antibodies.

[0112] Figure 3 provides images of Western blots of cell lysates using the 353.9-21, 353.2-1, 353.3-8, and 353.5-7 antibodies.

[0113] Figure 4 shows the binding of 353.2-1, 353.3-1, 353.5-7, and 353.9-21 antibodies to denatured KB cells (A) and non-denatured T47D cells (B) using a fluorescence activated cell sorter (FACS).

[0114] Figure 5 shows the binding of 353.2-1, 353.3-1, 353.5-7, and 353.9-21 antibodies to recombinant human FOLR1 using ELISA.

[0115] Figure 6 shows the binding of an anti-FOLR2 antibody and 353.2-1, 353.3-1, 353.5-7, and 353.9-21 antibodies to FOLR2 (A) and the binding of an anti-FOLR3 antibody and 353.2-1, 353.3-1, 353.5-7, and 353.9-21 antibodies to FOLR3 (B) by ELISA.

[0116] Figure 7 shows the binding of anti-FOLR1 antibodies 2.1 and huMov19 to deglycosylated and non-treated recombinant human FOLR1 by ELISA.

[0117] Figure 8 shows the binding of anti-FOLR1 antibodies 2.1, huMov19, and BN3.2 to deglysolyated and non-treated lysates of KB and Igrov-1 cells by western blot analysis.

[0118] Figures 9A and 9B show the relevant amino acids for resurfacing of the anti-FOLR1 FRIHC2-1 antibody and the kabat position corresponding to each residue.

[0119] Figure 10 shows the alignment of murine and humanized FRIHC2-1 antibody sequences for resurfacing. The murine heavy and light chain sequences correspond to SEQ ID NO:27 and SEQ ID NO:28, respectively. The resurfaced humanized heavy chain sequence corresponds to SEQ ID NO: 62, and the resurfaced human light chain version 1.0 and version 1.1 sequences correspond to SEQ ID NO:63 and SEQ ID NO:64, respectively. The leader "S" in the light chain sequence (framework position -1) is not considered for humanization and is not used in the humanized antibody sequence, so it is not shown in the figure.

[0120] Figures 11A and 11B show the relevant amino acids for CDR grafting of the anti-FOLR1 FRIHC2-1 antibody and the kabat position corresponding to each residue.

[0121] Figure 12 shows the alignment of murine and humanized FRIHC2-1 sequences for CDR grafting. The murine heavy and light chain sequences correspond to SEQ ID NO:27 and SEQ ID NO:28, respectively. The grafted humanized heavy chain sequence corresponds to SEQ ID NO: 65, and the grafted human light chain version 1.0 and version 1.1 sequences correspond to SEQ ID NO:66 and SEQ ID NO:67, respectively. The leader "S" in the light chain sequence (framework position -1) is not considered for humanization and is not used in the humanized antibody sequence, so it is not shown in the figure.

[0122] Figure 13 provides images of IHC staining of lung adenocarcinoma tissues using the FOLR1-2.1 (353-2.1) antibody at varying dilutions.

[0123] Figure 14 provides images of IHC staining of positive normal tissue (fallopian tube) (A) and cells (FOLR1 transfected cells (B)) and negative cells (untransfected cells (C)) using the FOLR1-2.1 (353-2.1) antibody.

[0124] Figure 15 provides images of IHC staining of ovarian cancer tissue (A) and lung adenocarcinoma tissue (B) samples using the FOLR1-2.1 (353-2.1) antibody.

[0125] Figure 16 shows membrane staining of tumor cells in an endometrial cancer sample with the FOLR1-2.1 assay. The stromal cells are not stained.

[0126] Figure 17 shows a comparison of staining and scoring difference between (A) the FOLR1-2.1 assay and (B) the BN3.2 assay.

DETAILED DESCRIPTION OF THE INVENTION

[0127] The present disclosure provides methods of detecting human folate receptor 1 (FOLR1), including membrane FOLR1, shed FOLR1, and FOLR1 on circulating tumor cells, and improving the efficacy of or the likelihood of response to the treatment of cancers