What is Claimed:

1. An isolated antibody, or antigen-binding fragment thereof, specific for folate receptor alpha (FRα) comprising a light chain CDR1 having the amino acid sequence of SEQ ID NO: 26, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 27, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 28, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 30, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 31, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 32.

2. The isolated antibody or antigen-binding fragment of claim 1, wherein the antibody is a murine antibody.

3. The isolated antibody or antigen-binding fragment of claim 1 or 2, wherein the antibody isotype is IgG.

4. The isolated antibody or antigen-binding fragment of claim 1, wherein the antibody is chimeric.

5. The isolated antibody or antigen-binding fragment of claim 1, wherein the antibody is humanized.

6. The isolated antibody or antigen-binding fragment of claim 1 having a light chain variable region comprising the amino acid sequence of SEQ ID NO: 29.

7. The isolated antibody or antigen-binding fragment of claim 1 having a heavy chain variable region comprising the amino acid sequence of SEQ ID NO: 33.

8. An isolated polynucleotide comprising the nucleotide sequence of SEQ ID NO: 61.

9. An isolated polynucleotide comprising the nucleotide sequence of SEQ ID NO: 65.

10. An isolated polynucleotide comprising the nucleotide sequences of SEQ ID NO: 61 and 65.

11. An isolated polynucleotide sequence encoding an antibody, or antigen-binding fragment thereof, specific for folate receptor alpha (FRα), wherein the light chain CDR1 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 26, the light chain CDR2 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 27, the light chain CDR3 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 28, the heavy chain CDR1 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 30, the heavy chain CDR2 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 31, and the heavy chain CDR3 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 32.

12. The isolated polynucleotide of claim 11, comprising the nucleic acid sequences of SEQ ID NO: 58, SEQ ID NO: 59, SEQ ID NO: 60, SEQ ID NO: 62, SEQ ID NO: 63, and SEQ ID NO: 64.

13. An isolated polynucleotide sequence encoding an antibody light chain, or antigen-binding fragment thereof, of an antibody that specifically binds to folate receptor alpha (FRα), wherein the light chain CDR1 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 58, the light chain CDR2 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 59, and the light chain CDR3 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 60.

14. An isolated polynucleotide sequence encoding an antibody heavy chain, or antigen-binding fragment thereof, of an antibody that specifically binds to folate receptor alpha (FRα), wherein the heavy chain CDR1 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 62, the heavy chain CDR2 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 63, and the heavy chain CDR3 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 64.

15. A vector comprising the isolated polynucleotide of any one of claims 8 to 14.

16. A recombinant cell comprising the vector of claim 15.

17. The recombinant cell of claim 16, wherein the cell is a eukaryotic cell, a plant cell, or a bacterium.

18. The recombinant cell of claim 17, wherein the eukaryotic cell is a CHO cell.

19. An isolated antibody specific for folate receptor alpha (FRα) produced by the cell line deposited with the ATCC having accession number PTA-11885.

20. An isolated antibody of any one of claims 1 to 7 or 19 capable of binding to folate receptor alpha (FRα) with a dissociation constant of $1x10^{-8}$ M or less.

21. An isolated antibody of any one of claims 1 to 7 or 19 capable of binding to folate receptor alpha (FRα) with a dissociation constant of about $2.73x10^{-11}$ M.

22. An isolated antibody, or antigen-binding fragment thereof, specific for folate receptor alpha (FRα) comprising a light chain CDR1 having the amino acid sequence of SEQ ID NO: 10, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 11, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 12, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 14, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 15, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 16.

23. The isolated antibody or antigen-binding fragment of claim 22, wherein the antibody is a murine antibody.

24. The isolated antibody or antigen-binding fragment of claim 22 or 23, wherein the antibody isotype is IgG.

25. The isolated antibody or antigen-binding fragment of claim 22, wherein the antibody is chimeric.

26. The isolated antibody or antigen-binding fragment of claim 22, wherein the antibody is humanized.

27. The isolated antibody or antigen-binding fragment of claim 22 having a light chain variable region comprising the amino acid sequence of SEQ ID NO: 13.

28. The isolated antibody or antigen-binding fragment of claim 22 having a heavy chain variable region comprising the amino acid sequence of SEQ ID NO: 17.

29. An isolated polynucleotide comprising the nucleotide sequence of SEQ ID NO: 45.

30. An isolated polynucleotide comprising the nucleotide sequence of SEQ ID NO: 49.

31. An isolated polynucleotide comprising the nucleotide sequences of SEQ ID NO: 45 and 49.

32. An isolated polynucleotide sequence encoding an antibody, or antigen-binding fragment thereof, specific for folate receptor alpha (FRα), wherein the light chain CDR1 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 10, the light chain CDR2 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 11, the light chain CDR3 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 12, the heavy chain CDR1 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 14, the heavy chain CDR2 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 15, and the heavy chain CDR3 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 16.

33. The isolated polynucleotide of claim 32, comprising the nucleic acid sequences of SEQ ID NO: 42, SEQ ID NO: 43, SEQ ID NO: 44, SEQ ID NO: 46, SEQ ID NO: 47, and SEQ ID NO: 48.

34. An isolated polynucleotide sequence encoding an antibody light chain, or antigen-binding fragment thereof, of an antibody that specifically binds to folate receptor alpha (FRα), wherein the light chain CDR1 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 42, the light chain CDR2 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 43, and the light chain CDR3 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 44.

35. An isolated polynucleotide sequence encoding an antibody heavy chain, or antigen-binding fragment thereof, of an antibody that specifically binds to folate receptor alpha (FRα), wherein the heavy chain CDR1 of the encoded antibody comprises the amino acid

sequence of SEQ ID NO: 46, the heavy chain CDR2 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 47, and the heavy chain CDR3 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 48.

36. A vector comprising the isolated polynucleotide of any one of claims 29 to 35.

37. A recombinant cell comprising the vector of claim 35.

38. The recombinant cell of claim 37, wherein the cell is a eukaryotic cell, a plant cell, or a bacterium.

39. The recombinant cell of claim 38, wherein the eukaryotic cell is a CHO cell.

40. An isolated antibody specific for folate receptor alpha (FRα) produced by the cell line deposited with the ATCC having accession number PTA-11884.

41. An isolated antibody of any one of claims 22 to 28 or 40 capable of binding to folate receptor alpha (FRα) with a dissociation constant of $1x10^{-8}$ M or less.

42. An isolated antibody of any one of claims 22 to 28 or 40 capable of binding to folate receptor alpha (FRα) with a dissociation constant of about $5.67x10^{-10}$ M.

43. An isolated antibody, or antigen-binding fragment thereof, specific for folate receptor alpha (FRα) comprising a light chain CDR1 having the amino acid sequence of SEQ ID NO: 18, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 19, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 20, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 22, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 23, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 24.

44. The isolated antibody or antigen-binding fragment of claim 43, wherein the antibody is a murine antibody.

45. The isolated antibody or antigen-binding fragment of claim 43 or 44, wherein the antibody isotype is IgG.

46. The isolated antibody or antigen-binding fragment of claim 43, wherein the antibody is chimeric.

47. The isolated antibody or antigen-binding fragment of claim 43, wherein the antibody is humanized.

48. The isolated antibody or antigen-binding fragment of claim 43 having a light chain variable region comprising the amino acid sequence of SEQ ID NO: 21.

49. The isolated antibody or antigen-binding fragment of claim 43 having a heavy chain variable region comprising the amino acid sequence of SEQ ID NO: 25.

50. An isolated polynucleotide comprising the nucleotide sequence of SEQ ID NO: 53.

51. An isolated polynucleotide comprising the nucleotide sequence of SEQ ID NO: 57.

52. An isolated polynucleotide comprising the nucleotide sequences of SEQ ID NO: 53 and 57.

53. An isolated polynucleotide sequence encoding an antibody, or antigen-binding fragment thereof, specific for folate receptor alpha (FRα), wherein the light chain CDR1 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 18, the light chain CDR2 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 19, the light chain CDR3 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 20, the heavy chain CDR1 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 22, the heavy chain CDR2 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 23, and the heavy chain CDR3 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 24.

54. The isolated polynucleotide of claim 53, comprising the nucleic acid sequences of SEQ ID NO: 50, SEQ ID NO: 51, SEQ ID NO: 52, SEQ ID NO: 54, SEQ ID NO: 55, and SEQ ID NO: 56.

55. An isolated polynucleotide sequence encoding an antibody light chain, or antigen-binding fragment thereof, of an antibody that specifically binds to folate receptor alpha (FRα),

wherein the light chain CDR1 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 50, the light chain CDR2 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 51, and the light chain CDR3 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 52.

56. An isolated polynucleotide sequence encoding an antibody heavy chain, or antigen-binding fragment thereof, of an antibody that specifically binds to folate receptor alpha (FRα), wherein the heavy chain CDR1 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 54, the heavy chain CDR2 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 55, and the heavy chain CDR3 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 56.

57. A vector comprising the isolated polynucleotide of any one of claims 50 to 56.

58. A recombinant cell comprising the vector of claim 57.

59. The recombinant cell of claim 58, wherein the cell is a eukaryotic cell, a plant cell, or a bacterium.

60. The recombinant cell of claim 59, wherein the eukaryotic cell is a CHO cell.

61. An isolated antibody specific for folate receptor alpha (FRα) produced by the cell line deposited with the ATCC having accession number PTA-11886.

62. An isolated antibody of any one of claims 43 to 49 or 61 capable of binding to folate receptor alpha (FRα) with a dissociation constant of $1x10^{-8}$ M or less.

63. An isolated antibody of any one of claims 43 to 49 or 61 capable of binding to folate receptor alpha (FRα) with a dissociation constant of about $1.02x10^{-10}$ M.

64. An isolated antibody, or antigen-binding fragment thereof, specific for folate receptor alpha (FRα) comprising a light chain CDR1 having the amino acid sequence of SEQ ID NO: 2, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 3, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 4, a heavy chain CDR1

having the amino acid sequence of SEQ ID NO: 6, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 7, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 8.

65. The isolated antibody or antigen-binding fragment of claim 64, wherein the antibody is a murine antibody.

66. The isolated antibody or antigen-binding fragment of claim 64 or 65, wherein the antibody isotype is IgG.

67. The isolated antibody or antigen-binding fragment of claim 64, wherein the antibody is chimeric.

68. The isolated antibody or antigen-binding fragment of claim 64, wherein the antibody is humanized.

69. The isolated antibody or antigen-binding fragment of claim 64 having a light chain variable region comprising the amino acid sequence of SEQ ID NO: 5.

70. The isolated antibody or antigen-binding fragment of claim 64 having a heavy chain variable region comprising the amino acid sequence of SEQ ID NO: 9.

71. An isolated polynucleotide comprising the nucleotide sequence of SEQ ID NO: 37.

72. An isolated polynucleotide comprising the nucleotide sequence of SEQ ID NO: 41.

73. An isolated polynucleotide comprising the nucleotide sequences of SEQ ID NO: 37 and 41.

74. An isolated polynucleotide sequence encoding an antibody, or antigen-binding fragment thereof, specific for folate receptor alpha (FRα), wherein the light chain CDR1 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 2, the light chain CDR2 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 3, the light chain CDR3 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 4, the heavy chain CDR1 of the encoded antibody comprises the amino acid

sequence of SEQ ID NO: 6, the heavy chain CDR2 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 7, and the heavy chain CDR3 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 8.

75. The isolated polynucleotide of claim 74, comprising the nucleic acid sequences of SEQ ID NO: 34, SEQ ID NO: 35, SEQ ID NO: 36, SEQ ID NO: 38, SEQ ID NO: 39, and SEQ ID NO: 40.

76. An isolated polynucleotide sequence encoding an antibody light chain, or antigen-binding fragment thereof, of an antibody that specifically binds to folate receptor alpha (FRα), wherein the light chain CDR1 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 34, the light chain CDR2 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 35, and the light chain CDR3 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 36.

77. An isolated polynucleotide sequence encoding an antibody heavy chain, or antigen-binding fragment thereof, of an antibody that specifically binds to folate receptor alpha (FRα), wherein the heavy chain CDR1 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 38, the heavy chain CDR2 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 39, and the heavy chain CDR3 of the encoded antibody comprises the amino acid sequence of SEQ ID NO: 40.

78. A vector comprising the isolated polynucleotide of any one of claims 71 to 77.

79. A recombinant cell comprising the vector of claim 78.

80. The recombinant cell of claim 79, wherein the cell is a eukaryotic cell, a plant cell, or a bacterium.

81. The recombinant cell of claim 80, wherein the eukaryotic cell is a CHO cell.

82. An isolated antibody specific for folate receptor alpha (FRα) produced by the cell line deposited with the ATCC having accession number PTA-11887.

83. An isolated antibody of any one of claims 64 to 70 or 82 capable of binding to folate receptor alpha (FRα) with a dissociation constant of $1x10^{-8}$ M or less.

84. An isolated antibody of any one of claims 64 to 70 or 82 capable of binding to folate receptor alpha (FRα) with a dissociation constant of about $7.15x10^{-10}$ M.

85. A method of detecting folate receptor alpha (FRα) in a biological sample, comprising exposing the sample to the antibody of any one of claims 1, 19, 22, 40, 43, 61, 64 or 82, or antigen-binding fragment thereof, and detecting folate receptor alpha (FRα).

86. The method of claim 85, wherein the biological sample is derived from urine, blood, serum, plasma, saliva, ascites, circulating cells, circulating tumor cells, cells that are not tissue associated, tissues, surgically resected tumor tissue, biopsies, fine needle aspiration samples, or histological preparations.

87. The method of claim 86, wherein the biological sample is derived from a human, rodent, nonhuman primate, rabbit, or dog.

88. A method of diagnosing a folate receptor alpha-expressing cancer in a subject, comprising:

a. exposing a biological sample of the subject to:

i. the antibody of any one of claims 1, 19, 22, 40, 43, 61, 64 or 82, or an antigen-binding fragment thereof, or

ii. an antibody, or antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by the antibody of any one of claims 1, 19, 22, 40, 43, 61, 64 or 82;

b. quantifying the amount of folate receptor alpha (FRα) present in the sample;

c. comparing the amount of folate receptor alpha (FRα) present in the sample to a known standard; and

d. determining whether the subject's folate receptor alpha (FRα) levels fall within the levels of folate receptor alpha (FRα) associated with cancer.

89. The method of claim 88, wherein the biological sample is derived from urine, blood, serum, plasma, saliva, ascites, circulating cells, circulating tumor cells, cells that are not tissue associated, tissues, surgically resected tumor tissue, biopsies, fine needle aspiration samples, or histological preparations.

90. The method of claim 88, wherein the cancer is breast cancer, thyroid cancer, colorectal cancer, endometrial cancer, fallopian tube cancer, ovarian cancer or lung cancer.

91. The method of claim 90, wherein the lung cancer is adenocarcinoma.

92. The method of claim 91, wherein a finding that the subject's adenocarcinoma cells express folate receptor alpha indicates that the subject will have a higher probability of an improved 5-year survival rate than if the adenocarcinoma cells do not express folate receptor alpha.

93. The method of claim 92, wherein the subject's adenocarcinoma is stage I, stage II, stage III, or stage IV adenocarcinoma.

94. The method of claim 88, wherein the known standard comprises folate receptor alpha (FRα) levels derived from subjects identified as being free of folate receptor alpha-expressing cancer or a preparation folate receptor alpha protein at a known concentration.

95. The method of claim 88, wherein the known standard comprises folate receptor alpha (FRα) levels derived from subjects identified as having early-stage folate receptor alpha-expressing cancer.

96. The method of claim 88, wherein the known standard comprises folate receptor alpha (FRα) levels derived from subjects identified as having mid-stage folate receptor alpha-expressing cancer.

97. The method of claim 88, wherein the known standard comprises folate receptor alpha (FRα) levels derived from subjects identified as having late-stage folate receptor alpha-expressing cancer.

98. The method of any one of claims 95 to 97, wherein the folate receptor alpha-expressing cancer is breast cancer, thyroid cancer, colorectal cancer, endometrial cancer, fallopian tube cancer, ovarian cancer or lung cancer.

99. A method of monitoring a folate receptor alpha-expressing cancer in a subject, comprising:

a. exposing a biological sample of the subject to:

i. the antibody of any one of claims 1, 19, 22, 40, 43, 61, 64 or 82, or an antigen-binding fragment thereof, or

ii. an antibody, or antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by the antibody of any one of claims 1, 19, 22, 40, 43, 61, 64 or 82;

b. quantifying the amount of folate receptor alpha (FRα) present in the sample that is bound by the antibody or antigen-binding fragment thereof;

c. comparing the amount of folate receptor alpha (FRα) present in the sample to either

i. a known standard, or

ii. a biological sample obtained from the subject at an earlier point in time; and

d. determining whether the subject's folate receptor alpha (FRα) levels are indicative of cancer progression, regression or stable disease.

100. The method of claim 99, wherein the biological sample is derived from urine, blood, serum, plasma, saliva, ascites, circulating cells, circulating tumor cells, cells that are not tissue associated, tissues, surgically resected tumor tissue, biopsies, fine needle aspiration samples, or histological preparations.

101. The method of claim 99, wherein the cancer is breast cancer, thyroid cancer, colorectal cancer, endometrial cancer, fallopian tube cancer, ovarian cancer.

102. The method of claim 101, wherein the cancer is lung cancer.

103. The method of claim 102, wherein the lung cancer is adenocarcinoma.

104. The method of claim 99, wherein the known standard comprises folate receptor alpha (FRα) levels derived from subjects identified as being free of cancer.

105. The method of claim 99, wherein the known standard comprises folate receptor alpha (FRα) levels derived from subjects identified as having early-stage cancer.

106. The method of claim 99, wherein the known standard comprises folate receptor alpha (FRα) levels derived from subjects identified as having intermediate-stage cancer.

107. The method of claim 99, wherein the known standard comprises folate receptor alpha (FRα) levels derived from subjects identified as having late-stage cancer.

108. The method of any one of claims 105 to 107, wherein the cancer is breast cancer, thyroid cancer, colorectal cancer, endometrial cancer, fallopian tube cancer, ovarian cancer or lung cancer.

109. A method of treating folate receptor alpha-expressing cancer in a subject, comprising:

a. exposing a biological sample of the subject to:

i. the antibody of any one of claims 1, 19, 22, 40, 43, 61, 64 or 82, or an antigen-binding fragment thereof, or

ii. an antibody, or antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by the antibody of any one of claims 1, 19, 22, 40, 43, 61, 64 or 82;

b. quantifying the amount of folate receptor alpha (FRα) present in the sample;

c. comparing the amount of folate receptor alpha (FRα) present in the sample to a known standard;

d. determining whether the subject's folate receptor alpha (FRα) levels fall within the levels of FRα associated with cancer; and

e. administering to the patient ,or prescribing, a treatment for the cancer.

110. The method of claim 109, wherein the biological sample is derived from urine, blood, serum, plasma, saliva, ascites, circulating cells, circulating tumor cells, cells that are not tissue associated, tissues, surgically resected tumor tissue, biopsies, fine needle aspiration samples, or histological preparations.

111. The method of claim 109, wherein the cancer is of epithelial origin.

112. The method of claim 111, wherein the epithelial cancer is breast cancer, thyroid cancer, colorectal cancer, endometrial cancer, fallopian tube cancer, ovarian cancer or lung cancer.

113. The method of claim 112, wherein the lung cancer is adenocarcinoma or squamous cell carcinoma.

114. The method of claim 109, wherein the cancer is ovarian cancer.

115. The method of claim 109, wherein the known standard comprises folate receptor alpha (FRα) levels derived from subjects identified as being free of cancer.

116. The method of claim 109, wherein the known standard comprises folate receptor alpha (FRα) levels derived from subjects identified as having early-stage cancer.

117. The method of claim 109, wherein the known standard comprises folate receptor alpha (FRα) levels derived from subjects identified as having mid-stage cancer.

118. The method of claim 109, wherein the known standard comprises folate receptor alpha (FRα) levels derived from subjects identified as having late-stage cancer.

119. The method of any one of claims 116 to 128, wherein the cancer is breast cancer, thyroid cancer, colorectal cancer, endometrial cancer, fallopian tube cancer, ovarian cancer or lung cancer.

120. The method of any one of claims 88 to 119, wherein the step of exposing a biological sample of the subject to:

i. the antibody of any one of claims 1, 19, 22, 40, 43, 61, 64 or 82, or an antigen-binding fragment thereof, or

ii. an antibody, or antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by the antibody of any one of claims 1, 19, 22, 40, 43, 61, 64 or 82;

further comprises exposing the biological sample of the subject to a second antibody, or antigen-binding fragment thereof, selected from:

iii. the antibody of any one of claims 1, 19, 22, 40, 43, 61, 64 or 82, or an antigen-binding fragment thereof, or

iv. an antibody, or antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by the antibody of any one of claims 1, 19, 22, 40, 43, 61, 64 or 82;

121. The method of claim 120, wherein the second antibody is different from the first antibody.

122. The method of claim 120, wherein the biological sample of the subject is exposed to:

i. the antibody of claim 1 or claim 19, or antigen-binding fragment thereof, and is then exposed to the antibody of any one of claims 22 or 40, 43 or 61, or 64 or 82;

ii. the antibody of claim 22 or claim 40, or antigen-binding fragment thereof, and is then exposed to the antibody of any one of claims 1 or 19, 43 or 61, or 64 or 82;

iii. the antibody of claim 43 or claim 61, or antigen-binding fragment thereof, and is then exposed to the antibody of any one of claims 1 or 19, 22 or 40, or 64 or 82; or

iv. the antibody of claim 64 or claim 82, or antigen-binding fragment thereof, and is then exposed to the antibody of any one of claims 1 or 19, 22 or 40, or 43 or 61.

123. The method of claim 120, wherein the biological sample of the subject is exposed to:

i. the antibody of claim 1 or claim 19, or antigen-binding fragment thereof, and is then exposed to an antibody, or antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by the antibody of any one of claims 22 or 40, 43 or 61, or 64 or 82;

ii. the antibody of claim 22 or claim 40, or antigen-binding fragment thereof, and is then exposed to an antibody, or antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by the antibody of any one of claims 1 or 19, 43 or 61, or 64 or 82;

iii. the antibody of claim 43 or claim 61, or antigen-binding fragment thereof, and is then exposed to an antibody, or antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by the antibody of any one of claims 1 or 19, 22 or 40, or 64 or 82; or

iv. the antibody of claim 64 or claim 82, or antigen-binding fragment thereof, and is then exposed to an antibody, or antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by the antibody of any one of claims 1 or 19, 22 or 40, or 43 or 61.

124. The method of claim 120, wherein the biological sample of the subject is exposed to:

i. an antibody, or antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by the antibody of claim 1 or claim 19, and is then exposed to the antibody of any one of claims 22 or 40, 43 or 61, or 64 or 82;

ii. an antibody, or antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by the antibody of claim 22 or claim 40, and is then exposed to the antibody of any one of claims 1 or 19, 43 or 61, or 64 or 82;

iii. an antibody, or antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by the antibody of claim 43 or claim 61, and is then exposed to the antibody of any one of claims 1 or 19, 22 or 40, or 64 or 82; or

iv. an antibody, or antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by the antibody of claim 64 or claim 82, and is then exposed to the antibody of any one of claims 1 or 19, 22 or 40, or 43 or 61.

125. The method of claim 120, wherein the biological sample of the subject is exposed to:

i. an antibody, or antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by the antibody of claim 1 or claim 19, and is then exposed to an antibody, or antigen-binding fragment thereof, capable of binding the epitope of folate receptor

alpha (FRα) that is bound by the antibody of any one of claims 22 or 40, 43 or 61, or 64 or 82;

ii. an antibody, or antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by the antibody of claim 22 or claim 40, and is then exposed to an antibody, or antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by the antibody of any one of claims 1 or 19, 43 or 61, or 64 or 82;

iii. an antibody, or antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by the antibody of claim 43 or claim 61, and is then exposed to an antibody, or antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by the antibody of any one of claims 1 or 19, 22 or 40, or 64 or 82; or

iv. an antibody, or antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by the antibody of claim 64 or claim 82, and is then exposed to an antibody, or antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by the antibody of any one of claims 1 or 19, 22 or 40, or 43 or 61.

126. The method of any one of claims 99 to 108, wherein the method is conducted following treatment of the subject for cancer.

127. The method of any one of claims 85 to 125, wherein the antibody, or antibody fragment, is labeled.

128. The method of claim 127, wherein the label is a radiolabel, a fluorescent label, an epitope tag, biotin, a chromophore label, an ECL label, or an enzyme.

129. The method of any one of claims 85 to 125, wherein the exposed folate receptor alpha (FRα) is or is not bound to a cell.

130. The method of any one of claims 85 to 125, wherein the presence of folate receptor alpha (FRα) in the sample is detected using western blot, immunohistochemistry, flow cytometery, radioimmunoassay, immunoprecipitation, electrochemiluminescence immunoassay (ECLIA), or ELISA.

131. A kit for detecting the presence of folate receptor alpha (FRα) in a biological sample, comprising:

i. at least one antibody of any one of claims 1 to 7, 19, 22 to 28, 40, 43-49, 61, 64-70, or 82, or an antigen-binding fragment thereof, and/or

ii. an antibody, or an antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by the antibody of any one of claims 19, 40, 61, or 82; and

a vessel for containing the antibody, when not in use, and instructions for use of the antibody.

132. A kit for detecting the presence of folate receptor alpha (FRα) in a biological sample, comprising:

i. at least one antibody of any one of claims 1 to 7, 19, 22 to 28, 40, 43-49, 61, 64-70, or 82, or an antigen-binding fragment thereof, and/or

ii. an antibody, or an antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by the antibody of any one of claims 19, 40, 61, or 82;

wherein the included antibody, or antigen-binding fragment thereof, is affixed to a solid support.

133. A kit for detecting the presence of folate receptor alpha (FRα) in a biological sample, comprising:

i. at least one antibody of any one of claims 1 to 7, 19, 22 to 28, 40, 43-49, 61, 64-70, or 82, or an antigen-binding fragment thereof, and/or

ii. an antibody, or an antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by the antibody of any one of claims 19, 40, 61, or 82;

wherein the included antibody, or antigen-binding fragment thereof, is detectably labeled.

134. The method of any one of claims 88 to 97, wherein the subject's folate receptor alpha (FRα) levels are indicative of the type of cancer afflicting the subject.

135. The method of claim 134, wherein the cancer is lung adenocarcinoma or squamous cell lung carcinoma.

136. An isolated antibody, or antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by the antibody of any one of claims 19, 40, 61, or 82.

137. The antibody, or fragment, of claim 136, wherein the antibody, or fragment, is recombinant.

138. The isolated antibody, or antigen-binding fragment thereof, of either claim 136 or 137, wherein the folate receptor alpha (FRα) epitope bound by the antibody of claim 19 comprises amino acid residues 41-53 of SEQ ID NO: 1.

139. The isolated antibody, or antigen-binding fragment thereof, of either claim 136 or 137, wherein the folate receptor alpha (FRα) epitope bound by the antibody of claim 61 comprises amino acid residues 68-80 or 92-105 of SEQ ID NO: 1.

140. The isolated antibody, or antigen-binding fragment thereof, of either claim 136 or 137, wherein the folate receptor alpha (FRα) epitope bound by the antibody of claim 61 comprises amino acid residues 68-80 and 92-105 of SEQ ID NO: 1.

141. The isolated antibody, or antigen-binding fragment thereof, of either claim 136 or 137, wherein the folate receptor alpha (FRα) epitope bound by the antibody of claim 82 comprises amino acid residues 199-209 of SEQ ID NO: 1.

142. The isolated antibody of any one of claims 1 to 7, 19, 22 to 28, 40, 43-49, 61, 64-70, 82, 136, or 137, wherein the antibody is detectably labeled.

143. The antibody of claim 142, wherein the detectable label is a radiolabel, a fluorescent label, an epitope tag, biotin, a chromophore label, an ECL label, or an enzyme.

144. The antibody of claim 143, wherein the label is ruthenium, ^{111}In-DOTA, ^{111}In-diethylenetriaminepentaacetic acid (DTPA), horseradish peroxidase, alkaline phosphatase and beta-galactosidase, or poly-histidine.

145. A method of detecting folate receptor alpha (FRα)-expressing cancer in a biological sample, comprising exposing the sample to the antibody of any one of claims 1 to 7, 19, 22 to 28, 40, 43-49, 61, 64-70, 82, 136, or 137, or an antigen-binding fragment thereof, and detecting folate receptor alpha (FRα).

146. The method of any one of claims 85 to 119, wherein the antibody, or antigen-binding fragment, is affixed to a solid support.

The method of any one of claims 88 to 98 further comprising predicting a favorable outcome for a subject having adenocarcinoma that expresses folate receptor alpha (FRα), wherein a favorable outcome is defined as having an increased 5-year survival rate.

What is Claimed:

1. A method of detecting folate receptor alpha (FRα) in a biological sample, comprising exposing the sample to an antibody or antigen-binding fragment comprising:

    a. a light chain CDR1 having the amino acid sequence of SEQ ID NO: 2, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 3, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 4, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 6, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 7, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 8;

    b. a light chain CDR1 having the amino acid sequence of SEQ ID NO: 10, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 11, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 12, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 14, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 15, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 16;

    c. a light chain CDR1 having the amino acid sequence of SEQ ID NO: 18, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 19, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 20, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 22, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 23, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 24; or

    d. a light chain CDR1 having the amino acid sequence of SEQ ID NO: 26, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 27, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 28, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 30, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 31, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 32;

and detecting folate receptor alpha (FRα).

2. The method of claim 1, wherein the biological sample is derived from urine, blood, serum, plasma, saliva, ascites, circulating cells, circulating tumor cells, cells that are not tissue associated, tissues, surgically resected tumor tissue, biopsies, fine needle aspiration samples, or histological preparations.

3. A method of diagnosing a folate receptor alpha-expressing cancer in a subject, comprising:

    a. exposing a biological sample of the subject to:

        i. an antibody, or antigen-binding fragment thereof, comprising

        a light chain CDR1 having the amino acid sequence of SEQ ID NO: 2, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 3, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 4, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 6, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 7, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 8;

        a light chain CDR1 having the amino acid sequence of SEQ ID NO: 10, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 11, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 12, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 14, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 15, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 16;

        a light chain CDR1 having the amino acid sequence of SEQ ID NO: 18, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 19, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 20, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 22, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 23, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 24; or

a light chain CDR1 having the amino acid sequence of SEQ ID NO: 26, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 27, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 28, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 30, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 31, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 32;

or

ii. an antibody, or antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by said antibody or antigen-binding fragment of (i);

b. quantifying the amount of folate receptor alpha (FRα) present in the sample;

c. comparing the amount of folate receptor alpha (FRα) present in the sample to a known standard; and

d. determining whether the subject's folate receptor alpha (FRα) levels fall within the levels of folate receptor alpha (FRα) associated with cancer.

4. A method of monitoring a folate receptor alpha-expressing cancer in a subject, comprising:

a. exposing a biological sample of the subject to:

i. an antibody, or antigen-binding fragment thereof, comprising

a light chain CDR1 having the amino acid sequence of SEQ ID NO: 2, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 3, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 4, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 6, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 7, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 8;

a light chain CDR1 having the amino acid sequence of SEQ ID NO: 10, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 11, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 12, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 14, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 15, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 16;

a light chain CDR1 having the amino acid sequence of SEQ ID NO: 18, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 19, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 20, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 22, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 23, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 24; or

a light chain CDR1 having the amino acid sequence of SEQ ID NO: 26, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 27, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 28, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 30, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 31, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 32;

or

ii. an antibody, or antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by said antibody or antigen-binding fragment of (i);

b. quantifying the amount of folate receptor alpha (FRα) present in the sample that is bound by the antibody or antigen-binding fragment thereof;

c. comparing the amount of folate receptor alpha (FRα) present in the sample to either

i. a known standard, or

ii. a biological sample obtained from the subject at an earlier point in time; and

d. determining whether the subject's folate receptor alpha (FRα) levels are indicative of cancer progression, regression or stable disease.

5. A method of treating folate receptor alpha-expressing cancer in a subject, comprising:

a. exposing a biological sample of the subject to:

i. an antibody, or antigen-binding fragment thereof, comprising

a light chain CDR1 having the amino acid sequence of SEQ ID NO: 2, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 3, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 4, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 6, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 7, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 8;

a light chain CDR1 having the amino acid sequence of SEQ ID NO: 10, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 11, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 12, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 14, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 15, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 16;

a light chain CDR1 having the amino acid sequence of SEQ ID NO: 18, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 19, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 20, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 22, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 23, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 24; or

a light chain CDR1 having the amino acid sequence of SEQ ID NO: 26, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 27, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 28, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 30, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 31, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 32;

or

ii. an antibody, or antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by said antibody or antigen-binding fragment of (i);

b. quantifying the amount of folate receptor alpha (FRα) present in the sample;

c. comparing the amount of folate receptor alpha (FRα) present in the sample to a known standard;

d. determining whether the subject's folate receptor alpha (FRα) levels fall within the levels of FRα associated with cancer; and

e. administering to the patient, or prescribing, a treatment for the cancer.

6. A method of detecting folate receptor alpha (FRα) in a biological sample, comprising exposing a biological sample of a subject to a first antibody, or antigen-binding fragment thereof, selected from:

i. an antibody, or antigen-binding fragment thereof, comprising

a light chain CDR1 having the amino acid sequence of SEQ ID NO: 2, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 3, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 4, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 6, a heavy

chain CDR2 having the amino acid sequence of SEQ ID NO: 7, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 8;

a light chain CDR1 having the amino acid sequence of SEQ ID NO: 10, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 11, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 12, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 14, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 15, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 16;

a light chain CDR1 having the amino acid sequence of SEQ ID NO: 18, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 19, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 20, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 22, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 23, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 24; or

a light chain CDR1 having the amino acid sequence of SEQ ID NO: 26, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 27, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 28, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 30, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 31, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 32;

or

ii. an antibody, or antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by said antibody or antigen-binding fragment of (i);

further comprising exposing the biological sample of the subject to a second antibody, or antigen-binding fragment thereof, selected from:

iii. an antibody, or antigen-binding fragment thereof, comprising

a light chain CDR1 having the amino acid sequence of SEQ ID NO: 2, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 3, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 4, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 6, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 7, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 8;

a light chain CDR1 having the amino acid sequence of SEQ ID NO: 10, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 11, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 12, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 14, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 15, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 16;

a light chain CDR1 having the amino acid sequence of SEQ ID NO: 18, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 19, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 20, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 22, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 23, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 24; or

a light chain CDR1 having the amino acid sequence of SEQ ID NO: 26, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 27, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 28, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 30, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 31, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 32;

or

iv. an antibody, or antigen-binding fragment thereof, capable of binding the epitope of folate receptor alpha (FRα) that is bound by said antibody or antigen-binding fragment of (iii).

7. An isolated antibody, or antigen-binding fragment thereof, specific for folate receptor alpha (FRα) comprising:

a. a light chain CDR1 having the amino acid sequence of SEQ ID NO: 2, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 3, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 4, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 6, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 7, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 8;

b. a light chain CDR1 having the amino acid sequence of SEQ ID NO: 10, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 11, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 12, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 14, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 15, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 16;

c. a light chain CDR1 having the amino acid sequence of SEQ ID NO: 18, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 19, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 20, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 22, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 23, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 24; or

d. a light chain CDR1 having the amino acid sequence of SEQ ID NO: 26, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 27, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 28, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 30, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 31, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 32.

8. The isolated antibody or antigen-binding fragment of claim 7, wherein the antibody is a murine antibody.

9. The isolated antibody or antigen-binding fragment of claim 7, wherein the antibody isotype is IgG.

10. The isolated antibody or antigen-binding fragment of claim 7, wherein the antibody is chimeric.

11. The isolated antibody or antigen-binding fragment of claim 7, wherein the antibody is humanized.

12. The isolated antibody of claim 7, wherein the antibody is detectably labeled.

13. The isolated antibody of claim 7, wherein said antibody or antigen-binding fragment is capable of binding to folate receptor alpha (FRα) with a dissociation constant of $1x10^{-8}$ M or less.

14. A kit for detecting the presence of folate receptor alpha (FRα) in a biological sample, comprising the antibody or antigen-binding fragment of claim 7 and a vessel for containing the antibody or antigen-binding fragment, when not in use, and instructions for use of the antibody or antigen-binding fragment.

15. An isolated polynucleotide encoding an antibody, or antigen-binding fragment thereof, specific for folate receptor alpha (FRα), said antibody or antigen-binding fragment comprising:

a) a light chain CDR1 having the amino acid sequence of SEQ ID NO: 2, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 3, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 4, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 6, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 7, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 8;

b) a light chain CDR1 having the amino acid sequence of SEQ ID NO: 10, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 11, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 12, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 14, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 15, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 16;

c) a light chain CDR1 having the amino acid sequence of SEQ ID NO: 18, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 19, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 20, a heavy chain CDR1 having the amino acid sequence of SEQ ID

NO: 22, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 23, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 24; or

d) a light chain CDR1 having the amino acid sequence of SEQ ID NO: 26, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 27, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 28, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 30, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 31, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 32.

16. A vector comprising the isolated polynucleotide of claim 15.

17. A cell comprising the isolated polynucleotide of claim 15.

18. The isolated polynucleotide of claim 15, wherein said polynucleotide encodes an antibody, or antigen-binding fragment thereof, specific for folate receptor alpha (FRα), said antibody or antigen-binding fragment comprising a light chain CDR1 having the amino acid sequence of SEQ ID NO: 26, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 27, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 28, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 30, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 31, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 32.

19. A vector comprising the isolated polynucleotide of claim 18.

20. A cell comprising the isolated polynucleotide of claim 18.

21. A cell that produces an antibody, or antigen-binding fragment thereof, specific for folate receptor alpha (FRα), said antibody or antigen-binding fragment comprising:

a) a light chain CDR1 having the amino acid sequence of SEQ ID NO: 2, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 3, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 4, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 6, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 7, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 8;

b) a light chain CDR1 having the amino acid sequence of SEQ ID NO: 10, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 11, a light chain CDR3 having the amino

acid sequence of SEQ ID NO: 12, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 14, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 15, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 16;

c) a light chain CDR1 having the amino acid sequence of SEQ ID NO: 18, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 19, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 20, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 22, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 23, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 24; or

d) a light chain CDR1 having the amino acid sequence of SEQ ID NO: 26, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 27, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 28, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 30, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 31, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 32.

22. The cell of claim 21, wherein said cell is a hybridoma.

23. A recombinant polynucleotide encoding an antibody, or antigen-binding fragment thereof, specific for folate receptor alpha (FRα), said antibody or antigen-binding fragment comprising:

a) a light chain CDR1 having the amino acid sequence of SEQ ID NO: 2, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 3, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 4, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 6, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 7, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 8;

b) a light chain CDR1 having the amino acid sequence of SEQ ID NO: 10, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 11, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 12, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 14, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 15, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 16;

c) a light chain CDR1 having the amino acid sequence of SEQ ID NO: 18, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 19, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 20, a heavy chain CDR1 having the amino acid sequence of SEQ ID

NO: 22, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 23, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 24; or

d) a light chain CDR1 having the amino acid sequence of SEQ ID NO: 26, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 27, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 28, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 30, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 31, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 32.

24. A cell comprising the recombinant polynucleotide of claim 23.

25. The recombinant polynucleotide of claim 23, wherein said polynucleotide encodes an antibody, or antigen-binding fragment thereof, specific for folate receptor alpha (FRα), said antibody or antigen-binding fragment comprising a light chain CDR1 having the amino acid sequence of SEQ ID NO: 26, a light chain CDR2 having the amino acid sequence of SEQ ID NO: 27, a light chain CDR3 having the amino acid sequence of SEQ ID NO: 28, a heavy chain CDR1 having the amino acid sequence of SEQ ID NO: 30, a heavy chain CDR2 having the amino acid sequence of SEQ ID NO: 31, and a heavy chain CDR3 having the amino acid sequence of SEQ ID NO: 32.

26. A vector comprising the recombinant polynucleotide of claim 25.

27. A cell comprising the recombinant polynucleotide of claim 25.