What we claim is:

1. An agent that specifically binds to a human frizzled receptor selected from the group consisting of FZD1, FZD2, FZD5, FZD7, and FZD8, wherein the agent:

(a) binds to at least part of a sequence Q(DE/ED)AGLEVHQF(Y/W)PL (SEQ ID NO:24) within the human frizzled receptor; and/or

(b) binds to at least part of a sequence (K/Q)(F/Y)GF(Q/A) (SEQ ID NO:69) within the human frizzled receptors.

2. The agent of claim 1, which specifically binds to more than one human frizzled receptor selected from the group consisting of FZD1, FZD2, FZD5, FZD7, and FZD8.

3. The agent of claim 1 or 2, which binds to at least part of a sequence GLEVHQ (SEQ ID NO:25) within the human frizzled receptor(s).

4. The agent of claim 2 or 3, wherein the human frizzled receptors to which the agent binds comprise FZD5 and FZD8.

5. An agent that competes for specific binding to human FZD1, FZD2, FZD5, FZD7, and/or FZD8 with an antibody in a competitive binding assay, wherein the antibody comprises a heavy chain variable region comprising SEQ ID NO:10 and a light chain variable region comprising SEQ ID NO:12 or SEQ ID NO:14.

6. An agent that competes for specific binding to human FZD5 and/or FZD8 with an antibody in a competitive binding assay, wherein the antibody comprises a heavy chain variable region comprising SEQ ID NO:85 and a light chain variable region comprising SEQ ID NO: 86.

7. An agent that specifically binds to human FZD8, wherein the agent:

(a) binds to at least part of a sequence GLEVHQ (SEQ ID NO: 25) within FZD8; and/or

(b) binds to at least part of a sequence QYGFA (SEQ ID NO:66) within FZD8.

8. The agent of claim 7, which further specifically binds human FZD1, FZD2, FZD5, and/or FZD7.

9. An agent that specifically binds to three or more human frizzled receptors, wherein the three or more human frizzled receptors comprise FZD1, FZD2, FZD5, FZD7, and/or FZD8.

10. The agent of claim 9, wherein the three or more human frizzled receptors further comprise FZD3, FZD4, FZD6, FZD9, and/or FZD10.

11. The agent of claim 9 or 10, wherein the three or more human receptors comprise FZD5 and FZD8.

12. The agent of claim 11, wherein the three or more human frizzled receptors comprise FZD1, FZD2, FZD5, FZD7, and FZD8.

13. An agent that specifically binds a human frizzled receptor, wherein the agent binds to at least part of the Biological Binding Site (BBS) within the human frizzled receptor.

14. The agent of claim 13, wherein the human frizzled receptor is FZD8 and the agent binds to at least part of:

(a) a conformational epitope formed by amino acids 72(F), 74-75(PL), 78(I), 92(Y), 121-122(LM), and 129-132(WPDR);

(b) a region consisting of the sequence QDEAGLEVHQFWPL (SEQ ID NO:67); and/or

(c) a region consisting of the sequence QYGFA (SEQ ID NO:66).

15. An agent that specifically binds a human frizzled receptor, wherein:

(a) if the human frizzled receptor is FZD8, the agent binds to at least part of a region of FZD8 consisting of the sequence QDEAGLEVHQFWPL (SEQ ID NO:67); and

(b) if the human frizzled receptor is FZD1, FZD2, FZD3, FZD4, FZD5, FZD6, FZD7, FZD9, or FZD10, the agent binds to at least part of a region of the human frizzled receptor corresponding to the region of FZD8 consisting of the sequence QDEAGLEVHQFWPL (SEQ ID NO:67).

16. The agent of claim 15, wherein

(a) if the human frizzled receptor is FZD8, the agent further binds to at least part of a region of FZD8 consisting of the sequence QYGFA (SEQ ID NO:66); and

(b) if the human frizzled receptor is FZD1, FZD2, FZD3, FZD4, FZD5, FZD6, FZD7, FZD9, or FZD10, the agent further binds to at least part of a region of the human frizzled receptor corresponding to the region of FZD8 consisting of the sequence QYGFA (SEQ ID NO:66).

17. An agent that specifically binds a human frizzled receptor, wherein:

(a) if the human frizzled receptor is FZD8, the agent binds to at least part of a region of FZD8 consisting of the sequence QYGFA (SEQ ID NO:66); and

(b) if the human frizzled receptor is FZD1, FZD2, FZD3, FZD4, FZD5, FZD6, FZD7, FZD9, or FZD10, the agent binds to at least part of a region of the human frizzled receptor corresponding to said region of FZD8.

18. The agent of any one of claims 13 or 15-17, wherein the human frizzled receptor is selected from the group consisting of FZD1, FZD2, FZD5, FZD7, and FZD8, and combinations thereof.

19. The agent of any one of claims 13-18, which specifically binds at least two human frizzled receptors.

20. The agent of claim 19, wherein each of the at least two human frizzled receptors is selected from the group consisting of FZD1, FZD2, FZD5, FZD7, and FZD8.

21. The agent of claim 20, wherein the at least two human frizzled receptors comprise FZD5 and FZD8.

22. The agent of claim 19 or 21, which specifically binds at least three human frizzled receptors.

23. The agent of claim 22, wherein each of the at least three human frizzled receptors is selected from the group consisting of FZD1, FZD2, FZD5, FZD7, and FZD8.

24. The agent of any one of claims 1-23, which is not an antibody.

25. The agent of any one of claims 1-23, which is an antibody.

26. The agent of claim 25, which comprises an antigen-binding site that specifically binds the human frizzled receptor(s).

27. An antibody that specifically binds a human frizzled receptor selected from the group consisting of FZD1, FZD2, FZD5, FZD7, and FZD8, wherein the antibody comprises a heavy chain variable region comprising:

(a) a heavy chain CDR1 comprising GFTFSHYTLS (SEQ ID NO:1), or a variant thereof comprising 1, 2, 3, or 4 amino acid substitutions; a heavy chain CDR2 comprising VISGDGSYTYYADSVKG (SEQ ID NO:2), or a variant thereof comprising 1, 2, 3, or 4 amino acid substitutions; and a heavy chain CDR3 comprising NFIKYVFAN (SEQ ID NO:3), or a variant thereof comprising 1, 2, 3, or 4 amino acid substitutions; and/or

(b) a light chain CDR1 comprising SGDKLGKKYAS (SEQ ID NO:4), SGDNIGSFYVH (SEQ ID NO:7), or a variant of either SEQ ID NO:4 or SEQ ID NO:7 comprising 1, 2, 3, or 4 conservative amino acid substitutions; a light chain CDR2 comprising EKDNRPSG (SEQ ID NO:5), DKSNRPSG (SEQ ID NO:8), or a variant of either SEQ ID NO:5 or SEQ ID NO:8 comprising 1, 2, 3, or 4 conservative amino acid substitutions; and a light chain CDR3 comprising SSFAGNSLE (SEQ ID NO:6), QSYANTLSL (SEQ ID NO:9), or a variant of either SEQ ID NO:6 or SEQ ID NO:9 comprising 1, 2, 3, or 4 conservative amino acid substitutions.

28. An antibody that specifically binds a human frizzled receptor selected from the group consisting of FZD1, FZD2, FZD5, FZD7, and FZD8, wherein the antibody comprises:

(a) a heavy chain CDR1 comprising GFTFSHYTLS (SEQ ID NO:1), a heavy chain CDR2 comprising VISGDGSYTYYADSVKG (SEQ ID NO:2), and a heavy chain CDR3 comprising NFIKYVFAN (SEQ ID NO:3); and/or

(b) a light chain CDR1 comprising SGDNIGSFYVH (SEQ ID NO:7), a light chain CDR2 comprising DKSNRPSG (SEQ ID NO:8), and a light chain CDR3 comprising QSYANTLSL (SEQ ID NO:9).

29. An antibody that specifically binds a human frizzled receptor selected from the group consisting of FZD1, FZD2, FZD5, FZD7, and FZD8, wherein the antibody comprises:

(a) a heavy chain CDR1 comprising GFTFSHYTLS (SEQ ID NO:1), a heavy chain CDR2 comprising VISGDGSYTYYADSVKG (SEQ ID NO:2), and a heavy chain CDR3 comprising NFIKYVFAN (SEQ ID NO:3); and/or

(b) a light chain CDR1 comprising SGDKLGKKYAS (SEQ ID NO:4), a light chain CDR2 comprising EKDNRPSG (SEQ ID NO:5), and a light chain CDR3 comprising SSFAGNSLE (SEQ ID NO:6).

30. A polypeptide that specifically binds a human frizzled receptor selected from the group consisting of FZD1, FZD2, FZD5, FZD7, and FZD8, wherein said polypeptide comprises:

(a) a polypeptide having at least about 80% sequence identity to SEQ ID NO:10; and/or

(b) a polypeptide having at least about 80% sequence identity to SEQ ID NO:12 or SEQ ID NO:14.

31. A polypeptide that specifically binds a human frizzled receptor selected from the group consisting of FZD1, FZD2, FZD5, FZD7, and FZD8, wherein said polypeptide comprises:

(a) a polypeptide having the amino acid sequence of SEQ ID NO: 10; and/or

(b) a polypeptide having the amino acid sequence of SEQ ID NO:12 or SEQ ID NO:14.

32. The polypeptide of claim 30 or 31, which is an antibody.

33. The antibody or polypeptide of any one of claims 27-32 which specifically binds both FZD5 and FZD8.

34. The antibody or polypeptide of claim 33, which specifically binds human FZD1, FZD2, FZD5, FZD7, and FZD8.

35. An antibody that specifically binds human FZD5 and/or FZD8, wherein the antibody comprises:

(a) a heavy chain CDR1 comprising GFTFSSYYIT (SEQ ID NO:77), or a variant thereof comprising 1, 2, 3, or 4 conservative amino acid substitutions; a heavy chain CDR2 comprising TISYSSSNTYYADSVKG (SEQ ID NO:78), or a variant thereof comprising 1, 2, 3, or 4 conservative amino acid substitutions; and a heavy chain CDR3 comprising SIVFDY (SEQ ID NO:79), or a variant thereof comprising 1, 2, 3, or 4 conservative amino acid substitutions; and/or

(b) a light chain CDR1 comprising SGDALGNRYVY (SEQ ID NO:80), or a variant thereof comprising 1, 2, 3, or 4 conservative amino acid substitutions; a light chain CDR2 comprising SG (SEQ ID NO:81), or a variant thereof comprising 1, 2, 3, or 4

conservative amino acid substitutions; and a light chain CDR3 comprising GSWDTRPYPKY (SEQ ID NO:82), or a variant thereof comprising 1, 2, 3, or 4 conservative amino acid substitutions.

36. An antibody that specifically binds human FZD5 and/or FZD8, wherein the antibody comprises:

(a) a heavy chain CDR1 comprising GFTFSSYYIT (SEQ ID NO:77), a heavy chain CDR2 comprising TISYSSSNTYYADSVKG (SEQ ID NO:78), and a heavy chain CDR3 comprising SIVFDY (SEQ ID NO:79); and/or

(b) a light chain CDR1 comprising SGDALGNRYVY (SEQ ID NO:80), a light chain CDR2 comprising SG (SEQ ID NO:81), and a light chain CDR3 comprising GSWDTRPYPKY (SEQ ID NO:82).

37. A polypeptide that specifically binds FZD5 and/or FZD8, wherein said polypeptide comprises:

(a) a polypeptide having at least about 80% identity to SEQ ID NO:85; and/or

(b) a polypeptide having at least about 80% identity to SEQ ID NO: 86.

38. A polypeptide that specifically binds FZD5 and/or FZD8, wherein said polypeptide comprises:

(a) a polypeptide having the amino acid sequence of SEQ ID NO:85; and/or

(b) a polypeptide having the amino acid sequence of SEQ ID NO: 86.

39. The polypeptide of claim 37 or 38, which is an antibody.

40. An antibody that competes for specific binding to human FZD1, FZD2, FZD5, FZD7, and/or FZD8 with 18R8, 18R5, 18R4605, or 18R4805.

41. An antibody that competes for specific binding to human FZD5 and/or FZD8 with 44R24.

42. The agent, antibody, or polypeptide of any one of claims 1-41 which is an antagonist of the human frizzled receptor(s).

43. The agent, antibody, or polypeptide of any one of claims 1-42 which is an IgG1 or IgG2 antibody.

44. The agent, antibody, or polypeptide of any one of claims 1-42 which is an antibody fragment.

45. The agent, antibody, or polypeptide of any one of claims 1-43 which is a monoclonal antibody.

46. The agent, antibody, or polypeptide of any one of claims 1-43 which is a human antibody.

47. The agent, antibody, or polypeptide of any one of claims 1-43 which is a humanized antibody.

48. The agent, polypeptide, or antibody of any one of claims 1-47, which inhibits binding of a Wnt to the human frizzled receptor.

49. The agent, polypeptide, or antibody of any one of claims 1-48, which inhibits canonical Wnt signaling.

50. The agent, polypeptide, or antibody of any one of claims 1-49, which inhibits tumor growth.

51. The agent, polypeptide, or antibody of any one of claims 1-50 which binds to an extracellular domain of the human frizzled receptor(s).

52. The agent, polypeptide, or antibody of claim 51, which binds to the Fri domain of the human frizzled receptor(s).

53. The agent, polypeptide, or antibody of any one of claims 1-52, which binds to the human frizzled receptor(s) with a K_D of about 100 nM or less.

54. An antibody encoded by the sequence of a plasmid deposited with the ATCC as accession number PTA-9540 or PTA-9541.

55. The agent, polypeptide, or antibody of any one of claims 1-54, which is isolated.

56. The agent, polypeptide, or antibody of claim 55, which is substantially pure.

57. An isolated cell producing the agent, polypeptide, or antibody of any one of claims 1-54.

58. A pharmaceutical composition comprising the agent, polypeptide, or antibody of any one of claims 1-54 and a pharmaceutically acceptable vehicle.

59. A pharmaceutical composition comprising the agent, polypeptide, or antibody of any one of claims 1-54 and a second anti-cancer agent.

60. A kit comprising the agent, polypeptide, or antibody of any one of claims 1-54 and a second anti-cancer agent.

61. A method of inhibiting canonical Wnt signaling in a cell, comprising contacting the cell with the agent, polypeptide, or antibody of any one of claims 1-54.

62. The method of claim 61, wherein the cell is a tumor cell.

63. A method of inhibiting tumor growth in a subject, comprising administering a therapeutically effective amount of the agent, polypeptide, or antibody of any one of claims 1-54 to the subject.

64. A method of reducing the tumorigenicity of a tumor that comprises cancer stem cells in a subject, said method comprising administering a therapeutically effective amount of the agent, polypeptide, or antibody of any one of claims 1-54 to the subject, wherein the frequency of cancer stem cells in the tumor is reduced by administration of the agent, polypeptide, or antibody.

65. A method of inducing cells in a tumor in a subject to differentiate, said method comprising administering a therapeutically effective amount of the agent, polypeptide, or antibody of any one of claims 1-54 to the subject.

66. The method of claim 65, wherein the tumor is a pancreatic tumor or a colon tumor.

67. The method of any one of claims 62-65, wherein the tumor is a tumor selected from the group consisting of colorectal tumor, pancreatic tumor, lung tumor, ovarian tumor, liver tumor, breast tumor, kidney tumor, prostate tumor, gastrointestinal tumor, melanoma, cervical tumor, bladder tumor, glioblastoma, and head and neck tumor.

68. The method of claim 67, wherein the tumor is a colorectal tumor, a breast tumor, or a pancreatic tumor.

69. A method of treating cancer in a subject, comprising administering a therapeutically effective amount of the agent, polypeptide, or antibody of any one of claims 1-54 to the subject.

70. The method of claim 69, wherein the cancer is a cancer selected from the group consisting of colorectal cancer, pancreatic cancer, lung cancer, ovarian cancer, liver cancer, breast cancer, kidney cancer, prostate cancer, gastrointestinal cancer, melanoma, cervical cancer, bladder cancer, glioblastoma, and head and neck cancer.

71. The method of claim 70, wherein the cancer is colorectal cancer, breast cancer, or pancreatic cancer.

72. The method of any one of claims 63-71, which further comprises administering a second anti-cancer agent to the subject.

73. The method of claim 72, wherein the second anti-cancer agent is a chemotherapeutic agent.

74. The method of claim 73, wherein the chemotherapeutic agent is an anti-metabolite.

75. The method of claim 74, wherein the chemotherapeutic agent is gemcitabine.

76. The method of claim 72, wherein the chemotherapeutic agent is a topoisomerase inhibitor.

77. The method of claim 76, wherein the chemotherapeutic agent is irinotecan.

78. The method of claim 72, wherein the chemotherapeutic agent is an antimitotic agent.

79. The method of claim 78, wherein the agent comprises a taxane.

80. The method of claim 79, wherein the taxane is paclitaxel.

81. The method of claim 72, wherein the second anti-cancer agent is an angiogenesis inhibitor.

82. The method of claim 81, wherein the angiogenesis inhibitor is an anti-VEGF antibody.

83. The method of claim 72, wherein the second anti-cancer agent is an inhibitor of Notch signaling.

84. The method of claim 83, wherein the inhibitor of Notch signaling is an anti-Notch antibody or an anti-DLL4 antibody.

85. A method of treating a disease in a subject wherein the disease is associated with Wnt signaling activation, comprising administering a therapeutically effective amount of the agent, polypeptide, or antibody of any one of claims 1-54 to the subject.

86. The method of claim 85, wherein the Wnt signaling is canonical Wnt signaling.

87. A method of treating a disorder in a subject, wherein the disorder is characterized by an increased level of stem cells and/or progenitor cells, comprising administering a therapeutically effective amount of the agent, polypeptide, or antibody of any one of claims 1-54 to the subject.

88. The method of any one of claims 63-87, wherein the subject is human.

89. An isolated polypeptide comprising a sequence selected from the group consisting of SEQ ID NOs: 10-15 and SEQ ID NOs: 85-86.

90. An isolated polynucleotide comprising a polynucleotide encoding the polypeptide of claim 89.

91. An isolated polynucleotide comprising a sequence selected from the group consisting of SEQ ID NOs: 17-22, 87-90, 92, and 94-95.

92. An isolated polynucleotide that comprises a polynucleotide that hybridizes under conditions of high stringency to:

(a) a polynucleotide selected from the group consisting of SEQ ID NOs: 17, 19, 21, 87-90, 92, and 94-95; or

(b) a polynucleotide encoding a polypeptide selected from the group consisting of a sequence SEQ ID NOs:10, 12, 14, and 85-86.

93. A vector comprising the polynucleotide of any one of claims 90-92.

94. An isolated cell comprising the polynucleotide of any one of claims 90-92.

95. A method of screening an agent for activity against cancer stem cells, comprising:

comparing the levels of one or more differentiation markers in a first solid tumor that has been exposed to the agent to the levels of the one or more differentiation markers in a second solid tumor that has not been exposed to the agent.

96. A method of screening an agent for activity against cancer stem cells, comprising:

(a) exposing a first solid tumor, but not a second solid tumor, to the agent;

(b) assessing the levels of one or more differentiation markers in the first and second solid tumors; and

(c) comparing the levels of the one or more differentiation markers in the first and second solid tumors.

97. The method of claim 95 or 96, wherein the agent specifically binds to one or more human frizzled receptors.

98. The method of claim 95 or 96, wherein increased levels of the one or more differentiation markers in the first solid tumor relative to the second solid tumor indicates efficacy against solid tumor stem cells.

99. The method of claim 95 or 96, wherein the solid tumor is a pancreatic tumor.

100. The method of claim 99, wherein the one or more differentiation markers comprise (a) one or more mucins or (b) chromogranin A (CHGA).

101. The method of claim 100, wherein the one or more differentiation markers comprise Mucin 16 (Muc16).

102. The method of claim 95 or 96, wherein the solid tumor is a colon tumor.

103. The method of claim 102, wherein the one or more differentiation markers comprise cytokeratin 7.

104. The method of claim 95 or 96, wherein the agent is an antibody that specifically binds to one or more human frizzled receptor.

105. A method of reducing myofibroblast activation in the stroma of a solid tumor, comprising contacting the stroma with an effective amount of the agent, polypeptide, or antibody of any one of claims 1-54.

106. A method of inducing cells in a tumor to differentiate, said method comprising contacting the tumor with an effective amount of an antibody that specifically binds to and is an antagonist of a human frizzled receptor.

107. A method of reducing myofibroblast activation in the stroma of a solid tumor, comprising contacting the stroma with an effective amount of an antibody that specifically binds to and is an antagonist of a human frizzled receptor.

What we claim is:

1. An isolated antibody that specifically binds one or more human frizzled receptors selected from the group consisting of FZD1, FZD2, FZD5, FZD7, and FZD8, wherein the antibody comprises:
(a) a heavy chain CDR1 comprising GFTFSHYTLS (SEQ ID NO:1); a heavy chain CDR2 comprising VISGDGSYTYYADSVKG (SEQ ID NO:2); and a heavy chain CDR3 comprising NFIKYVFAN (SEQ ID NO:3); and
(b) a light chain CDR1 comprising SGDNIGSFYVH (SEQ ID NO:7); a light chain CDR2 comprising DKSNRPSG (SEQ ID NO:8); and a light chain CDR3 comprising QSYANTLSL (SEQ ID NO:9); or a light chain CDR1 comprising SGDKLGKKYAS (SEQ ID NO:4); a light chain CDR2 comprising EKDNRPSG (SEQ ID NO:5); and a light chain CDR3 comprising SSFAGNSLE (SEQ ID NO:6).

2. The antibody of claim 1, which comprises a light chain CDR1 comprising SGDNIGSFYVH (SEQ ID NO:7), a light chain CDR2 comprising DKSNRPSG (SEQ ID NO:8), and a light chain CDR3 comprising QSYANTLSL (SEQ ID NO:9).

3. The antibody of claim 1, which comprises a light chain CDR1 comprising SGDKLGKKYAS (SEQ ID NO:4); a light chain CDR2 comprising EKDNRPSG (SEQ ID NO:5); and a light chain CDR3 comprising SSFAGNSLE (SEQ ID NO:6).

4. An isolated antibody that specifically binds one or more human frizzled receptors selected from the group consisting of FZD1, FZD2, FZD5, FZD7, and FZD8, wherein said antibody comprises:
(a) a polypeptide having at least about 80% sequence identity to SEQ ID NO:10; and
(b) a polypeptide having at least about 80% sequence identity to SEQ ID NO:14 or SEQ ID NO:12.

5. The antibody of claim 4, which comprises:
(a) a polypeptide having the amino acid sequence of SEQ ID NO:10; and
(b) a polypeptide having the amino acid sequence of SEQ ID NO:14.

6. An isolated antibody that specifically binds one or more human frizzled receptors selected from the group consisting of FZD1, FZD2, FZD5, FZD7, and FZD8, wherein the antibody:
(a) binds at least part of a sequence Q(DE/ED)AGLEVHQF(Y/W)PL (SEQ ID NO:24) within the human frizzled receptor(s); and/or

(b) binds at least part of a sequence (K/Q)(F/Y)GF(Q/A) (SEQ ID NO:69) within the human frizzled receptor(s).

7. The antibody of claim 6, which binds at least part of a sequence GLEVHQ (SEQ ID NO: 25); and/or binds at least part of a sequence QYGFA (SEQ ID NO:66) within the human frizzled receptor(s).

8. The antibody of claim 6, wherein the human frizzled receptor is FZD8 and the antibody binds at least part of:

(a) a conformational epitope formed by amino acids 72(F), 74-75(PL), 78(I), 92(Y), 121-122(LM), and 129-132(WPDR);

(b) a region consisting of the sequence QDEAGLEVHQFWPL (SEQ ID NO:67); and/or

(c) a region consisting of the sequence QYGFA (SEQ ID NO:66).

9. The antibody of any one of claims 6-8, wherein the antibody comprises:

(a) a heavy chain CDR1 comprising GFTFSHYTLS (SEQ ID NO:1); a heavy chain CDR2 comprising VISGDGSYTYYADSVKG (SEQ ID NO:2); and a heavy chain CDR3 comprising NFIKYVFAN (SEQ ID NO:3); and

(b) a light chain CDR1 comprising SGDNIGSFYVH (SEQ ID NO:7); a light chain CDR2 comprising DKSNRPSG (SEQ ID NO:8); and a light chain CDR3 comprising QSYANTLSL (SEQ ID NO:9); or a light chain CDR1 comprising SGDKLGKKYAS (SEQ ID NO:4); a light chain CDR2 comprising EKDNRPSG (SEQ ID NO:5); and a light chain CDR3 comprising SSFAGNSLE (SEQ ID NO:6).

10. The antibody of any one of claims 1-9, which specifically binds FZD1, FZD2, FZD5, FZD7, and FZD8.

11. An antibody that specifically binds a human frizzled receptor, wherein the antibody binds to at least part of the Biological Binding Site (BBS) within the human frizzled receptor.

12. An antibody that competes for specific binding to human FZD1, FZD2, FZD5, FZD7, and/or FZD8 with a second antibody in a competitive binding assay, wherein the second antibody comprises a heavy chain variable region comprising SEQ ID NO:10 and a light chain variable region comprising SEQ ID NO:14 or SEQ ID NO:12.

13. An antibody that competes for specific binding to human FZD1, FZD2, FZD5, FZD7, and/or FZD8 with 18R5, 18R8, 18R4605, or 18R4805.

14. The antibody of any one of claims 1-13 which is a monoclonal antibody, a humanized antibody, a human antibody, an IgG1 antibody, an IgG2 antibody, or an antibody fragment.

15. The antibody of claim 1 encoded by the sequence of a plasmid deposited with the ATCC as accession number PTA-9541, PTA-9540, PTA-10307, PTA-10309, or PTA-10311.

16. The antibody of any one of claims 1-15, which is conjugated to a cytotoxic agent.

17. An isolated cell producing the antibody of any one of claims 1-16.

18. A pharmaceutical composition comprising the antibody of any one of claims 1-16 and a pharmaceutically acceptable vehicle.

19. Use of the antibody of any one of claims 1-16, in the manufacture of a medicament for the treatment of cancer.

20. Use of the antibody of any one of claims 1-16, in the manufacture of a medicament for inhibiting canonical Wnt signaling.

21. Use of the antibody of any one of claims 1-16, in the manufacture of a medicament for inhibiting tumor growth.

22. The use of the antibody of claims 19-21, wherein the treatment of cancer, inhibiting canonical Wnt signaling or inhibiting tumor growth comprises administering a second anti-cancer agent to a subject.

23. The use of the antibody of claim 22, wherein the second anti-cancer agent is a chemotherapeutic agent, an angiogenesis inhibitor, an inhibitor of Notch signaling, an anti-Notch antibody, or an anti-Notch ligand antibody.

24. An isolated polypeptide comprising a sequence selected from the group consisting of SEQ ID NOs:10-15.

25. An isolated polynucleotide comprising:

(a) a polynucleotide encoding the antibody of any one of claims 1-16 or the polypeptide of claim 24; or

(b) a sequence selected from the group consisting of SEQ ID NOs:17-22, 87-90, 92, and 94-95.

26. A vector comprising the polynucleotide of claim 25.