We Claim:

1) A method of treating a patient having a solid tumor, comprising administering to the patient in need thereof a therapeutically effective amount of an antibody that specifically binds CD38 for a time sufficient to treat the solid tumor.
2) The method of claim 1, wherein the antibody that specifically binds CD38 elicits an immune response in the patient.
3) The method of claim 2, wherein the immune response is an effector T cell (Teff) response.
4) The method of claim 3, wherein the Teff response is mediated by $CD4^+$ T cells or $CD8^+$ T cells.
5) The method of claim 4, wherein the Teff response is mediated by the $CD8^+$ T cells.
6) The method of claim 3, wherein the Teff response is an increase in the number of the $CD8^+$ T cells, increased $CD8^+$ T cell proliferation, increased T cell clonal expansion, increased $CD8^+$ memory cell formation, increased antigen-dependent antibody production, increased cytokine production, increased chemokine production or increased interleukin production. (by which cells)
7) The method of claim 1, wherein the antibody that specifically binds CD38 inhibits function of an immune suppressor cell.
8) The method of claim 7, wherein the immune suppressor cell is a regulatory T cell (Treg).
9) The method of claim 8, wherein the Treg is a $CD3^+CD4^+CD25^+CD127^{dim}$ T cell.
10) The method of claim 9, wherein the Treg expresses CD38.
11) The method of claim 10, wherein the Treg function is inhibited by killing the Treg.
12) The method of claim 11, wherein killing the Treg is mediated by antibody-dependent cell cytotoxicity (ADCC).
13) The method of claim 7, wherein the immune suppressor cell is a myeloid-derived suppressor cell (MDSC).
14) The method of claim 13, wherein the MDSC is a $CD11b^+HLADR^-CD14^-CD33^+CD15^+$ cell.
15) The method of claim 14, wherein the $CD11b^+HLADR^-CD14^-CD33^+CD15^+$ cell expresses CD38.
16) The method of claim 15, wherein the MDSC function is inhibited by killing the MDSC.
17) The method of claim 16, wherein killing of MDSC is mediated by ADCC.

18) The method of claim 7, wherein the immune suppressor cell is a regulatory B cell (Breg).

19) The method of claim 18, wherein the Breg is a $CD19^{+}CD24^{+}CD38^{+}$ cell.

20) The method of claim 19, wherein the Breg function is inhibited by killing the Breg.

21) The method of claim 20, wherein killing the Breg is mediated by ADCC.

22) The method of claim 7, wherein the immune suppressor cell resides in bone marrow or in peripheral blood.

23) The method of any of the claims 1-22, wherein the solid tumor is a melanoma, a lung cancer, a squamous non-small cell lung cancer (NSCLC), a non-squamous NSCLC, a colorectal cancer, a prostate cancer, a castration-resistant prostate cancer, a stomach cancer, an ovarian cancer, a gastric cancer, a liver cancer, a pancreatic cancer, a thyroid cancer, a squamous cell carcinoma of the head and neck, a carcinoma of the esophagus or gastrointestinal tract, a breast cancer, a fallopian tube cancer, a brain cancer, an urethral cancer, a genitourinary cancer, an endometriosis, a cervical cancer or a metastatic lesion of the cancer.

24) The method of any of the claims 1-23, wherein the solid tumor lacks detectable CD38 expression.

25) The method of any of the claims 1-24, wherein the antibody that specifically binds CD38 is a non-agonistic antibody.

26) The method of claim 25, wherein the non-agonistic antibody induces proliferation of a sample of peripheral blood mononuclear cells *in vitro* in a statistically insignificant manner.

27) The method of any of the claims 1-26, wherein the antibody that specifically binds CD38 competes for binding to CD38 with an antibody comprising a heavy chain variable region (VH) of SEQ ID NO: 4 and a light chain variable region (VL) of SEQ ID NO: 5.

28) The method of claim 27, wherein the antibody that specifically binds CD38 binds at least to the region SKRNIQFSCKNIYR (SEQ ID NO: 2) and the region EKVQTLEAWVIHGG (SEQ ID NO: 3) of human CD38 (SEQ ID NO: 1).

29) The method of any of the claims 1-28, wherein the antibody that specifically binds CD38 comprises a heavy chain complementarity determining region (HCDR) 1, a HCDR2, a HCDR3, a light chain complementarity determining region (LCDR) 1, a LCDR2 and a LCDR3 amino acid sequences of SEQ ID NOs: 6, 7, 8, 9, 10 and 11, respectively.

30) The method of any of the claims 1-29, wherein the antibody that specifically binds CD38 comprises the VH of SEQ ID NO: 4 and the VL of SEQ ID NO: 5.

31) The method of any of the claims 1-26, wherein the antibody that specifically binds CD38 comprises the HCDR1, the HCDR2, the HCDR3, the LCDR1, the LCDR2 and the LCDR3 of:

a) the VH of SEQ ID NO: 14 and the VL of SEQ ID NO: 15;
b) the VH of SEQ ID NO: 16 and the VL of SEQ ID NO: 17;
c) the VH of SEQ ID NO: 18 and the VL of SEQ ID NO: 19; or
d) the VH of SEQ ID NO: 20 and the VL of SEQ ID NO: 21.

32) The method of claim 31, wherein the antibody that specifically binds CD38 comprises:

a) the VH of SEQ ID NO: 14 and the VL of SEQ ID NO: 15;
b) the VH of SEQ ID NO: 16 and the VL of SEQ ID NO: 17;
c) the VH of SEQ ID NO: 18 and the VL of SEQ ID NO: 19; or
d) the VH of SEQ ID NO: 20 and the VL of SEQ ID NO: 21.

33) The method of any of the claims 1-32, wherein the antibody that specifically binds CD38 is administered in combination with a second therapeutic agent.

34) The method of claim 33, wherein the second therapeutic agent is a chemotherapeutic agent, a targeted anti-cancer therapy, a standard of care drug for treatment of solid tumor, or an immune checkpoint inhibitor.

35) The method of claim 34, wherein the immune checkpoint inhibitor is an anti-PD-1 antibody, an anti-PD-L1 antibody, an anti-PD-L2 antibody, an anti-LAG3 antibody, an anti-TIM3 antibody, or an anti-CTLA-4 antibody.

36) The method of claim 35, wherein the immune checkpoint inhibitor is an anti-PD-1 antibody.

37) The method of claim 36, wherein the anti-PD-1 antibody comprises

a) the VH of SEQ ID NO: 22 and the VL of SEQ ID NO: 23;
b) the VH of SEQ ID NO: 24 and the VL of SEQ ID NO: 25;
c) the VH of SEQ ID NO: 32 and the VL of SEQ ID NO: 33; or
d) the VH of SEQ ID NO: 34 and the VL of SEQ ID NO:35.

38) The method of claim 35, wherein the immune checkpoint inhibitor is an anti-PD-L1 antibody.

39) The method of claim 38, wherein the anti-PD-L1 antibody comprises

a) the VH of SEQ ID NO: 26 and the VL of SEQ ID NO: 27;
b) the VH of SEQ ID NO: 28 and the VL of SEQ ID NO: 29; or
c) the VH of SEQ ID NO: 30 and the VL of SEQ ID NO: 31.

40) The method of claim 35, wherein the immune checkpoint inhibitor is an anti-PD-L2 antibody.

41) The method of claim 35, wherein the immune checkpoint inhibitor is an anti-LAG3 antibody.

42) The method of claim 35, wherein the immune checkpoint inhibitor is an anti-TIM-3 antibody.

43) The method of claim 42, wherein the anti-TIM-3 antibody comprises

a) the VH of SEQ ID NO: 36 and the VL of SEQ ID NO: 37; or

b) the VH of SEQ ID NO: 38 and the VL of SEQ ID NO: 39.

44) The method of any of the claims 33-43, wherein the second therapeutic agent is administered simultaneously, sequentially or separately.

45) The method of any of the claims 1-44, wherein the antibody that specifically binds CD38 is administered intravenously.

46) The method of any of the claims 1-44, wherein the antibody that specifically binds CD38 is administered subcutaneously in a pharmaceutical composition comprising the antibody that specifically binds CD38 and a hyaluronidase.

47) The method of claim 46, wherein the hyaluronidase is rHuPH20 of SEQ ID NO: 40.

48) The method of any of the claims 1-47, wherein the patient is treated or has been treated with radiation therapy.

49) The method of any of the claims 1-47, wherein the patient has had or will undergo surgery.

50) A method of suppressing activity of an immune suppressor cell, comprising contacting the immune suppressing cell with an antibody that specifically binds CD38.

51) The method of claim 50, wherein the immune suppressor cell is a Treg.

52) The method of claim 51, wherein the Treg is a $CD3^{+}CD4^{+}CD25^{+}CD127^{dim}$ T cell.

53) The method of claim 50, wherein the immune suppressor cell is a MDSC.

54) The method of claim 53, wherein the MDSC is a $CD11b^{+}HLADR^{-}CD14^{-}CD33^{+}CD15^{+}$ cell.

55) The method of claim 50, wherein the immune suppressor cell is a Breg.

56) The method of claim 55, wherein the Breg is a $CD19^{+}CD24^{+}CD38^{+}$ cell.

57) The method of any of the claims 50-56, wherein the antibody that specifically binds CD38 is a non-agonistic antibody.

58) The method of claim 57, wherein the non-agonistic antibody induces proliferation of a sample of peripheral blood mononuclear cells *in vitro* in a statistically insignificant manner.

59) The method of any of the claims 50-58, wherein the antibody that specifically binds CD38 competes for binding to CD38 with an antibody comprising the VH of SEQ ID NO: 4 and the VL of SEQ ID NO: 5.

60) The method of claim 59, wherein the antibody that specifically binds CD38 binds at least to the region SKRNIQFSCKNIYR (SEQ ID NO: 2) and the region EKVQTLEAWVIHGG (SEQ ID NO: 3) of human CD38 (SEQ ID NO: 1).

61) The method of any of the claims 50-60, wherein the antibody that specifically binds CD38 comprises the HCDR1, the HCDR2, the HCDR3, the LCDR1, the LCDR2 and the LCDR3 amino acid sequences of SEQ ID NOs: 6, 7, 8, 9, 10 and 11, respectively.

62) The method of claim 61, wherein the antibody that specifically binds CD38 comprises the VH of SEQ ID NO: 4 and the VL of SEQ ID NO: 5.

63) The method of any of the claims 50-58, wherein the antibody that specifically binds CD38 comprises the HCDR1, the HCDR2, the HCDR3, the LCDR1, the LCDR2 and the LCDR3 of:

a) the VH of SEQ ID NO: 14 and the VL of SEQ ID NO: 15;
b) the VH of SEQ ID NO: 16 and the VL of SEQ ID NO: 17;
c) the VH of SEQ ID NO: 18 and the VL of SEQ ID NO: 19; or
d) the VH of SEQ ID NO: 20 and the VL of SEQ ID NO: 21.

64) The method of claim 63, wherein the antibody that specifically binds CD38 comprises:

a) the VH of SEQ ID NO: 14 and the VL of SEQ ID NO: 15;
b) the VH of SEQ ID NO: 16 and the VL of SEQ ID NO: 17;
c) the VH of SEQ ID NO: 18 and the VL of SEQ ID NO: 19; or
d) the VH of SEQ ID NO: 20 and the VL of SEQ ID NO: 21.

65) A method of enhancing an immune response in a patient, comprising administering to the patient an antibody that specifically binds CD38.

66) The method of claim 65, wherein the patient has a cancer or a viral infection.

67) The method of claim 65 or 66, wherein the antibody that specifically binds CD38 is a non-agonistic antibody.

68) The method of claim 67, wherein the non-agonistic antibody induces proliferation of a sample of peripheral blood mononuclear cells *in vitro* in a statistically insignificant manner.

69) The method of any of the claims 65-68, wherein the antibody that specifically binds CD38 competes for binding to CD38 with an antibody comprising the VH of SEQ ID NO: 4 and the VL of SEQ ID NO: 5.

70) The method of any of the claims 65- 69, wherein the antibody that specifically binds CD38 binds at least to the region SKRNIQFSCIYR (SEQ ID NO: 2) and the region EKVQTLEAWVIHGG (SEQ ID NO: 3) of human CD38 (SEQ ID NO: 1).

71) The method of any of the claims 65-70, wherein the antibody that specifically binds CD38 comprises the HCDR1, the HCDR2, the HCDR3, the LCDR1, the LCDR2 and the LCDR3 amino acid sequences of SEQ ID NOs: 6, 7, 8, 9, 10 and 11, respectively.

72) The method of any of the claims 65-70, wherein the antibody that specifically binds CD38 comprises the VH of SEQ ID NO: 4 and the VL of SEQ ID NO: 5.

73) The method of any of the claims 65-68, wherein the antibody that specifically binds CD38 comprises the HCDR1, the HCDR2, the HCDR3, the LCDR1, the LCDR2 and the LCDR3 of:

a) the VH of SEQ ID NO: 14 and the VL of SEQ ID NO: 15;
b) the VH of SEQ ID NO: 16 and the VL of SEQ ID NO: 17;
c) the VH of SEQ ID NO: 18 and the VL of SEQ ID NO: 19; or
d) the VH of SEQ ID NO: 20 and the VL of SEQ ID NO: 21.

74) The method of claim 73, wherein the antibody that specifically binds CD38 comprises:

a) the VH of SEQ ID NO: 14 and the VL of SEQ ID NO: 15;
b) the VH of SEQ ID NO: 16 and the VL of SEQ ID NO: 17;
c) the VH of SEQ ID NO: 18 and the VL of SEQ ID NO: 19; or
d) the VH of SEQ ID NO: 20 and the VL of SEQ ID NO: 21.

75) A method of treating a patient having a viral infection, comprising administering to the patient an antibody that specifically binds CD38 for a time sufficient to treat the viral infection.

76) The method of claim 75, wherein the antibody that specifically binds CD38 is a non-agonistic antibody.

77) The method of claim 75 or 76, wherein the non-agonistic antibody induces proliferation of a sample of peripheral blood mononuclear cells *in vitro* in a statistically insignificant manner.

78) The method of any of the claims 75-77, wherein the antibody that specifically binds CD38 competes for binding to CD38 with an antibody comprising the VH of SEQ ID NO: 4 and the VL of SEQ ID NO: 5.

79) The method of any of the claims 75-78, wherein the antibody that specifically binds CD38 binds at least to the region SKRNIQFSCIYR (SEQ ID NO: 2) and the region EKVQTLEAWVIHGG (SEQ ID NO: 3) of human CD38 (SEQ ID NO: 1).

80) The method of any of the claims 75-79, wherein the antibody that specifically binds CD38 comprises the HCDR1, the HCDR2, the HCDR3, the LCDR1, the LCDR2 and the LCDR3 amino acid sequences of SEQ ID NOs: 6, 7, 8, 9, 10 and 11, respectively.

81) The method of any of the claims 75-80, wherein the antibody that specifically binds CD38 comprises the VH of SEQ ID NO: 4 and the VL of SEQ ID NO: 5.

82) The method of any of the claims 75-77, wherein the antibody that specifically binds CD38 comprises the HCDR1, the HCDR2, the HCDR3, the LCDR1, the LCDR2 and the LCDR3 of:

a) the VH of SEQ ID NO: 14 and the VL of SEQ ID NO: 15;
b) the VH of SEQ ID NO: 16 and the VL of SEQ ID NO: 17;
c) the VH of SEQ ID NO: 18 and the VL of SEQ ID NO: 19; or
d) the VH of SEQ ID NO: 20 and the VL of SEQ ID NO: 21.

83) The method of claim 82, wherein the antibody that specifically binds CD38 comprises:

a) the VH of SEQ ID NO: 14 and the VL of SEQ ID NO: 15;
b) the VH of SEQ ID NO: 16 and the VL of SEQ ID NO: 17;
c) the VH of SEQ ID NO: 18 and the VL of SEQ ID NO: 19; or
d) the VH of SEQ ID NO: 20 and the VL of SEQ ID NO: 21.