WHAT IS CLAIMED IS:

1. An antibody or antigen binding fragment thereof that specifically binds to CD37, wherein said antibody or fragment thereof is capable of inducing complement dependent cytotoxicity (CDC).

2. The antibody or antigen binding fragment thereof of claim 1, wherien said antibody is also capable of inducing apoptosis.

3. The antibody or antigen binding fragment thereof of claim 1 or 2, wherien said antibody is also capable of inducing antibody dependent cell mediated cytotoxicity (ADCC).

4. An antibody or antigen binding fragment thereof that specifically binds to the same CD37 epitope as an antibody selected from the group consisting of:

(a) an antibody comprising the polypeptide of SEQ ID NO:55 and the polypeptide of SEQ ID NO:72;
(b) an antibody comprising the polypeptide of SEQ ID NO:59 and the polypeptide of SEQ ID NO:75;
(c) an antibody comprising the polypeptide of SEQ ID NO:61 and the polypeptide of SEQ ID NO:77;
(d) an antibody comprising the polypeptide of SEQ ID NO:64 and the polypeptide of SEQ ID NO:80;
(e) an antibody comprising the polypeptide of SEQ ID NO:66 and the polypeptide of SEQ ID NO:82;
(f) an antibody comprising the polypeptide of SEQ ID NO:68 and the polypeptide of SEQ ID NO:84; and
(g) an antibody comprising the polypeptide of SEQ ID NO:70 and the polypeptide of SEQ ID NO:86.

5. An antibody or antigen binding fragment thereof that specifically binds to CD37 and specifically binds to the polypeptide of SEQ ID NO: 180.

6. The antibody or antigen binding fragment thereof of claim 5, wherein said antibody or fragment thereof does not bind to the polypeptide of SEQ ID NO: 184.

7. An antibody or antigen binding fragment thereof that specifically binds to CD37 and does not specifically bind to the polypeptide of SEQ ID NO: 184.

8. An antibody or antigen binding fragment thereof that specifically binds to CD37, wherein said antibody or fragment thereof competitively inhibits an antibody selected from the group consisting of:

(a) an antibody comprising the polypeptide of SEQ ID NO:55 and the polypeptide of SEQ ID NO:72;
(b) an antibody comprising the polypeptide of SEQ ID NO:59 and the polypeptide of SEQ ID NO:75;
(c) an antibody comprising the polypeptide of SEQ ID NO:61 and the polypeptide of SEQ ID NO:77;
(d) an antibody comprising the polypeptide of SEQ ID NO:64 and the polypeptide of SEQ ID NO:80;

(e) an antibody comprising the polypeptide of SEQ ID NO:66 and the polypeptide of SEQ ID NO:82;
(f) an antibody comprising the polypeptide of SEQ ID NO:68 and the polypeptide of SEQ ID NO:84; and
(g) an antibody comprising the polypeptide of SEQ ID NO:70 and the polypeptide of SEQ ID NO:86.

9. An antibody or antigen binding fragment thereof produced by hybridoma selected from the group consisting of ATCC Deposit Designation PTA-10664, deposited with the ATCC on February 18, 2010, ATCC Deposit Designation PTA-10665, deposited with the ATCC on February 18, 2010, ATCC Deposit Deisgnation PTA-10666, deposited with the ATCC on February 18, 2010, ATCC Deposit Designation PTA-10667 deposited with the ATCC on February 18, 2010, ATCC Deposit Designation PTA-10668, deposited with the ATCC on February 18, 2010, ATCC Deposit Designation PTA-10669, deposited with the ATCC on February 18, 2010, and ATCC Deposit Designation PTA-10670, deposited with the ATCC on February 18, 2010.

10. An antibody or antigen binding fragment thereof that specifically binds to CD37, wherein said antibody comprises polypeptide sequences selected from the group consisting of:

(a) SEQ ID NOs: 4, 5, and 6 and SEQ ID NOs: 28, 29, and 30;
(b) SEQ ID NOs: 7, 8, and 9 and SEQ ID NOs: 31, 32, and 33;
(c) SEQ ID NOs: 10, 11, and 12 and SEQ ID NOs: 34, 35, and 36;
(d) SEQ ID NOs: 13, 14, and 15 and SEQ ID NOs: 37, 38, and 39;
(e) SEQ ID NOs: 13, 14, and 15 and SEQ ID NOs: 37, 40, and 39;
(f) SEQ ID NOs: 16, 17, and 18 and SEQ ID NOs: 41, 42, and 43;
(g) SEQ ID NOs: 19, 20, and 21 and SEQ ID NOs: 44, 45, and 46;
(h) SEQ ID NOs: 19, 20, and 21 and SEQ ID NOs: 44, 47, and 46;
(i) SEQ ID NOs: 22, 23, and 24 and SEQ ID NOs: 48, 49, and 50;
(j) SEQ ID NOs: 22, 23, and 24 and SEQ ID NOs: 48, 51, and 50;
(k) SEQ ID NOs: 25, 26, and 27 and SEQ ID NOs: 52, 53, and 54; and
(l) variants of (a) to (k) comprising 1, 2, 3, or 4 conservative amino acid substitutions.

11. The antibody or antigen binding fragment thereof of claim 10, wherein the antibody comprises polypeptide sequences that are at least 90% identical to polypeptide sequences selected from the group consisting of:

(a) SEQ ID NO:55 and SEQ ID NO:72;
(b) SEQ ID NO:56 and SEQ ID NO:73;
(c) SEQ ID NO:57 and SEQ ID NO:74;

(d) SEQ ID NO:58 and SEQ ID NO:74;
(e) SEQ ID NO:59 and SEQ ID NO:75;
(f) SEQ ID NO:60 and SEQ ID NO:76;
(g) SEQ ID NO:61 and SEQ ID NO:77;
(h) SEQ ID NO:62 and SEQ ID NO:78;
(i) SEQ ID NO:63 and SEQ ID NO:79;
(j) SEQ ID NO:64 and SEQ ID NO:80;
(k) SEQ ID NO:65 and SEQ ID NO:81;
(l) SEQ ID NO:66 and SEQ ID NO:82;
(m) SEQ ID NO:67 and SEQ ID NO:83;
(n) SEQ ID NO:68 and SEQ ID NO:84;
(o) SEQ ID NO:69 and SEQ ID NO:85;
(p) SEQ ID NO:70 and SEQ ID NO:86; and
(q) SEQ ID NO:71 and SEQ ID NO:87.

12. The antibody or antigen binding fragment thereof of claim 11, wherein the polypeptide sequences are at least 95% identical to polypeptide sequences selected from the group consisting of:

((a) SEQ ID NO:55 and SEQ ID NO:72;
(b) SEQ ID NO:56 and SEQ ID NO:73;
(c) SEQ ID NO:57 and SEQ ID NO:74;
(d) SEQ ID NO:58 and SEQ ID NO:74;
(e) SEQ ID NO:59 and SEQ ID NO:75;
(f) SEQ ID NO:60 and SEQ ID NO:76;
(g) SEQ ID NO:61 and SEQ ID NO:77;
(h) SEQ ID NO:62 and SEQ ID NO:78;
(i) SEQ ID NO:63 and SEQ ID NO:79;
(j) SEQ ID NO:64 and SEQ ID NO:80;
(k) SEQ ID NO:65 and SEQ ID NO:81;
(l) SEQ ID NO:66 and SEQ ID NO:82;
(m) SEQ ID NO:67 and SEQ ID NO:83;
(n) SEQ ID NO:68 and SEQ ID NO:84;
(o) SEQ ID NO:69 and SEQ ID NO:85;
(p) SEQ ID NO:70 and SEQ ID NO:86; and
(q) SEQ ID NO:71 and SEQ ID NO:87.

13. The antibody or antigen binding fragment thereof of claim 12, wherein the polypeptide sequences are at least 99% identical to polypeptide sequences selected from the group consisting of:

(a) SEQ ID NO:55 and SEQ ID NO:72;
(b) SEQ ID NO:56 and SEQ ID NO:73;
(c) SEQ ID NO:57 and SEQ ID NO:74;
(d) SEQ ID NO:58 and SEQ ID NO:74;
(e) SEQ ID NO:59 and SEQ ID NO:75;
(f) SEQ ID NO:60 and SEQ ID NO:76;
(g) SEQ ID NO:61 and SEQ ID NO:77;
(h) SEQ ID NO:62 and SEQ ID NO:78;
(i) SEQ ID NO:63 and SEQ ID NO:79;
(j) SEQ ID NO:64 and SEQ ID NO:80;
(k) SEQ ID NO:65 and SEQ ID NO:81;
(l) SEQ ID NO:66 and SEQ ID NO:82;
(m) SEQ ID NO:67 and SEQ ID NO:83;
(n) SEQ ID NO:68 and SEQ ID NO:84;
(o) SEQ ID NO:69 and SEQ ID NO:85;
(p) SEQ ID NO:70 and SEQ ID NO:86; and
(q) SEQ ID NO:71 and SEQ ID NO:87.

14. The antibody or antigen binding fragment thereof of any one of claims 1-13, wherien said antibody or antigen binding fragment thereof is murine, non-human, humanized, chimeric, resurfaced, or human.

15. The antibody or antigen binding fragment thereof of any one of claims 4-14, wherein said antibody or antibody fragment is capable of inducing apoptosis of a cell expressing CD37 *in vitro* in the absence of cross-linking agents.

16. The antibody or antigen binding fragment thereof of any one of claims 4-14, wherein said antibody or antigen binding fragment is capable of inducing complement dependent cytotoxicity (CDC).

17. The antibody or antigen binding fragment thereof of any one of claims 4-14, wherein said antibody is capable of inducing antibody dependent cell mediated cytotoxicity (ADCC).

18. A human or humanized antibody or antigen binding fragment thereof that specifically binds to CD37, wherein said antibody or fragment thereof is capable of inducing apoptosis of a cell expressing CD37 *in vitro* in the absence of cross-linking agents.

19. The human or humanized antibody or antigen binding fragment thereof of claim 18, wherein said human or humanized antibody or antigen binding fragment thereof is also capable of inducing complement dependent cytotoxicity (CDC).

20. The human or humanized antibody or antigen binding fragment thereof of claim 18 or claim 19, wherein said human or humanized antibody or antigen binding fragment thereof is also capable of inducing antibody dependent cell mediated cytotoxicity (ADCC).

21. The antibody or antigen binding fragment thereof of any one of claims 1-20, wherein said antibody binds to human CD37 and macaque CD37.

22. The antibody or antigen binding fragment thereof of any one of claims 1-21, which is a full length antibody.

23. The antibody or antigen binding fragment thereof of any one of claims 1-21, which is an antigen binding fragment.

24. The antibody or antigen binding fragment thereof of any one of claims 1-21, wherien said antibody or antigen binding fragment thereof comprises a Fab, Fab', $F(ab')_2$, Fd, single chain Fv or scFv, disulfide linked Fv, V-NAR domain, IgNar, intrabody, IgGΔCH2, minibody, $F(ab')_3$, tetrabody, triabody, diabody, single-domain antibody, DVD-Ig, Fcab, mAb^2, $(scFv)_2$, or scFv-Fc.

25. A polypeptide that specifically binds CD37, wherein said polypeptide comprises sequences selected from the group consisting of:

(a) SEQ ID NOs: 4, 5, and 6 and SEQ ID NOs: 28, 29, and 30;
(b) SEQ ID NOs: 7, 8, and 9 and SEQ ID NOs: 31, 32, and 33;
(c) SEQ ID NOs: 10, 11, and 12 and SEQ ID NOs: 34, 35, and 36;
(d) SEQ ID NOs: 13, 14, and 15 and SEQ ID NOs: 37, 38, and 39;
(e) SEQ ID NOs: 13, 14, and 15 and SEQ ID NOs: 37, 40, and 39;
(f) SEQ ID NOs: 16, 17, and 18 and SEQ ID NOs: 41, 42, and 43;
(g) SEQ ID NOs: 19, 20, and 21 and SEQ ID NOs: 44, 45, and 46;
(h) SEQ ID NOs: 19, 20, and 21 and SEQ ID NOs: 44, 47, and 46;
(i) SEQ ID NOs: 22, 23, and 24 and SEQ ID NOs: 48, 49, and 50;

(j) SEQ ID NOs: 22, 23, and 24 and SEQ ID NOs: 48, 51, and 50;
(k) SEQ ID NOs: 25, 26, and 27 and SEQ ID NOs: 52, 53, and 54; and
(l) variants of (a) to (k) comprising 1, 2, 3, or 4 conservative amino acid substitutions.

26. The polypeptide of claim 25, wherein said polypetide comprises sequences that are at least 90% identical to sequences selected from the group consisting of :

(a) SEQ ID NO:55 and SEQ ID NO:72;
(b) SEQ ID NO:56 and SEQ ID NO:73;
(c) SEQ ID NO:57 and SEQ ID NO:74;
(d) SEQ ID NO:58 and SEQ ID NO:74;
(e) SEQ ID NO:59 and SEQ ID NO:75;
(f) SEQ ID NO:60 and SEQ ID NO:76;
(g) SEQ ID NO:61 and SEQ ID NO:77;
(h) SEQ ID NO:62 and SEQ ID NO:78;
(i) SEQ ID NO:63 and SEQ ID NO:79;
(j) SEQ ID NO:64 and SEQ ID NO:80;
(k) SEQ ID NO:65 and SEQ ID NO:81;
(l) SEQ ID NO:66 and SEQ ID NO:82;
(m) SEQ ID NO:67 and SEQ ID NO:83;
(n) SEQ ID NO:68 and SEQ ID NO:84;
(o) SEQ ID NO:69 and SEQ ID NO:85;
(p) SEQ ID NO:70 and SEQ ID NO:86; and
(q) SEQ ID NO:71 and SEQ ID NO:87.

27. The polypeptide of claim 26, wherein the sequences are at least 95% identical to sequences selected from the group consisting of :

(a) SEQ ID NO:55 and SEQ ID NO:72;
(b) SEQ ID NO:56 and SEQ ID NO:73;
(c) SEQ ID NO:57 and SEQ ID NO:74;
(d) SEQ ID NO:58 and SEQ ID NO:74;
(e) SEQ ID NO:59 and SEQ ID NO:75;
(f) SEQ ID NO:60 and SEQ ID NO:76;
(g) SEQ ID NO:61 and SEQ ID NO:77;
(h) SEQ ID NO:62 and SEQ ID NO:78;
(i) SEQ ID NO:63 and SEQ ID NO:79;

(j) SEQ ID NO:64 and SEQ ID NO:80;
(k) SEQ ID NO:65 and SEQ ID NO:81;
(l) SEQ ID NO:66 and SEQ ID NO:82;
(m) SEQ ID NO:67 and SEQ ID NO:83;
(n) SEQ ID NO:68 and SEQ ID NO:84;
(o) SEQ ID NO:69 and SEQ ID NO:85;
(p) SEQ ID NO:70 and SEQ ID NO:86; and
(q) SEQ ID NO:71 and SEQ ID NO:87.

28. The polypeptide of claim 27, wherein the sequences are at least 99% identical to sequences selected from the group consisting of :

(a) SEQ ID NO:55 and SEQ ID NO:72;
(b) SEQ ID NO:56 and SEQ ID NO:73;
(c) SEQ ID NO:57 and SEQ ID NO:74;
(d) SEQ ID NO:58 and SEQ ID NO:74;
(e) SEQ ID NO:59 and SEQ ID NO:75;
(f) SEQ ID NO:60 and SEQ ID NO:76;
(g) SEQ ID NO:61 and SEQ ID NO:77;
(h) SEQ ID NO:62 and SEQ ID NO:78;
(i) SEQ ID NO:63 and SEQ ID NO:79;
(j) SEQ ID NO:64 and SEQ ID NO:80;
(k) SEQ ID NO:65 and SEQ ID NO:81;
(l) SEQ ID NO:66 and SEQ ID NO:82;
(m) SEQ ID NO:67 and SEQ ID NO:83;
(n) SEQ ID NO:68 and SEQ ID NO:84;
(o) SEQ ID NO:69 and SEQ ID NO:85;
(p) SEQ ID NO:70 and SEQ ID NO:86; and
(q) SEQ ID NO:71 and SEQ ID NO:87.

29. An isolated cell producing the the antibody or antigen binding fragment thereof of any one of claims 1-24 or the polypeptide of any one of claims 25-28.

30. A method of making the antibody or antigen-binding fragment thereof of any one of claims 1-24 or the polypeptide of any one of claims 25-28, comprising (a) culturing the cell of claim 29; and (b) isolating said antibody, antigen-binding fragment thereof, or polypeptide from said cultured cell.

31. An immunoconjugate having the formula (A) - (L) - (C), wherein:

(A) is an antibody or antigen binding fragment of any one of claims 1-24 or polypeptide of any one of claims 25-28;
(L) is a linker; and
(C) is a cytotoxic agent; and
wherein said linker (L) links (A) to (C).

32. An immunoconjugate having the formula (A) - (L) - (C), wherein:

(A) is an antibody or antigen binding fragment that specifically binds to CD37;
(L) is a non-cleavable linker; and
(C) is a cytotoxic agent; and
wherein said linker (L) links (A) to (C).

33. An immunoconjugate having the formula (A) - (L) - (C), wherein:

(A) is an antibody or antigen binding fragment that specifically binds to CD37;
(L) is a linker; and
(C) is a maytansinoid; and
wherein said linker (L) links (A) to (C).

34. The immunoconjugate of claim 33, wherein said linker is a non-cleavable linker.

35. The immunoconjugate of any one of claims 31-34, further comprising a second (C).

36. The immunoconjugate of claim 35, further comprising a third (C).

37. The immunoconjugate of claim 36, further comprising a fourth (C).

38. The immunoconjugate of one of claims 31-34 comprising 2-6 (C).

39. The immunoconjugate of one of claims 31-34 comprising 3-4 (C).

40. The immunoconjugate of any one of claims 31-39, wherein said linker is selected from the group consisting of a cleavable linker, a non-cleavable linker, a hydrophilic linker, and a dicarboxylic acid based linker.

41. The immunoconjugate of claim 40, wherein said linker is selected from the group consisting: N-succinimidyl 4-(2-pyridyldithio)pentanoate (SPP); N-succinimidyl 4-(2-pyridyldithio)butanoate

(SPDB) or N-succinimidyl 4-(2-pyridyldithio)-2-sulfobutanoate (sulfo-SPDB); N-succinimidyl 4-(maleimidomethyl) cyclohexanecarboxylate (SMCC); N-sulfosuccinimidyl 4-(maleimidomethyl) cyclohexanecarboxylate (sulfoSMCC); N-succinimidyl-4-(iodoacetyl)-aminobenzoate (SIAB); and N-succinimidyl-[(N-maleimidopropionamido)-tetraethyleneglycol] ester (NHS-PEG4-maleimide).

42. The immunoconjugate of claim 41, wherein said linker is N-succinimidyl-[(N-maleimidopropionamido)-tetraethyleneglycol] ester (NHS-PEG4-maleimide).

43. The immunoconjugate of any one of claims 31-32 and 35-42, wherein said cytotoxic agent is selected from the group consisting of a maytansinoid, maytansinoid analog, doxorubicin, a modified doxorubicin, benzodiazepine, taxoid, CC-1065, CC-1065 analog, duocarmycin, duocarmycin analog, calicheamicin, dolastatin, dolastatin analog, aristatin, tomaymycin derivative, and leptomycin derivative or a prodrug of the agent.

44. The immunoconjugate of claim 43, wherein said cytotoxic agent is a maytansinoid.

45. The immunoconjugate of claim 44, wherein said cytotoxic agent is N(2')-deacetyl-N(2')-(3-mercapto-1-oxopropyl)-maytansine (DM1) or N(2')-deacetyl-N2-(4-mercapto-4-methyl-1-oxopentyl)-maytansine (DM4).

46. A pharmaceutical composition comprising the antibody or antigen binding fragment thereof of any one of claims 1-24, the polypeptide of any one of claims 25-28, or the immunoconjugate of any one of claims 31-45 and a pharmaceutically acceptable carrier.

47. A pharmaceutical composition comprising the immunoconjugates of any one of claims 31-45, wherein the immunoconjugates have an average of about 3 to about 4 (C) per (A).

48. The pharmaceutical composition of claim 41, wherein the immunoconjugates have an average of about 3.5 (C) per (A).

49. The pharmaceutical composition of claim 41, wherein the immunoconjugates have an average of about 3.5 ± 0.5 (C) per (A).

50. The pharmaceutical composition of any one of claims 46-49, further comprising a second anti-cancer agent.

51. A diagnostic reagent comprising the antibody or antigen binding fragment thereof of any one of claims 1-24, the polypeptide of any one of claims 25-28, or the immunoconjugate of any one of claims 31-45 which is labeled.

52. The diagnostic reagent of claim 51, wherein said label is selected from the group consisting of a radiolabel, a fluorophore, a chromophore, an imaging agent and a metal ion.

53. A kit comprising the antibody or antigen binding fragment thereof of any one of claims 1-24, the polypeptide of any one of claims 25-28, the immunoconjugate of any one of claims 31-45, or the pharmaceutical composition of any one of claims 46-50.

54. A method for inhibiting the growth of a cell expressing CD37 comprising contacting the cell with the antibody or antigen binding fragment thereof of any one of claims 1-24, the polypeptide of any one of claims 25-28, the immunoconjugate of any one of claims 31-45, or the pharmaceutical composition of any one of claims 46-50 to the subject.

55. A method for treating a patient having cancer comprising administering to said patient a therapeutically effective amount of the antibody or antigen binding fragment thereof of any one of claims 1-24, the polypeptide of any one of claims 25-28, the immunoconjugate of any one of claims 31-45, or the pharmaceutical composition of any one of claims 46-50 to the subject.

56. The method of claim 55, further comprising administering a second anti-cancer agent to the subject

57. The method of claim 56, wherein said second anti-cancer agent is a chemotherapeutic agent.

58. The method of any one of claims 55-57, wherein said cancer is selected from the group consisting of B cell lymphomas, NHL, precursor B cell lymphoblastic leukemia/lymphoma and mature B cell neoplasms, B cell chronic lymphocytic leukemia (CLL)/small lymphocytic lymphoma (SLL), B cell prolymphocytic leukemia, lymphoplasmacytic lymphoma, mantle cell lymphoma (MCL), follicular lymphoma (FL), low grade, intermediate-grade and high-grade (FL), cutaneous follicle center lymphoma, marginal zone B cell lymphoma, MALT type marginal zone B cell lymphoma, nodal marginal zone B cell lymphoma, splenic type marginal zone B cell lymphoma, hairy cell leukemia, diffuse large B cell lymphoma, Burkitt's lymphoma, plasmacytoma, plasma cell myeloma, post-transplant lymphoproliferative disorder, Waldenstrom's macroglobulinemia, and anaplastic large-cell lymphoma (ALCL).

59. An isolated polynucleotide comprising a sequence that encodes a polypeptide at least 90% identical to a sequence selected from the group consisting of SEQ ID NOs: 55-87.

60. The isolated polynucleotide of claim 59, wherein said sequence is at least 95% identical a sequence selected from the group consisting of SEQ ID NOs: 55-87.

61. The isolated polynucleotide of claim 60, wherein said sequence is at least 99% identical to a sequence selected from the group consisting of SEQ ID NOs: 55-87.

62. The isolated polynucleotide of any one of claims 59-61, wherein the polynucleotide comprises a sequence that is at least 90% identical to SEQ ID NOs: 121-151.

63. The isolated polynucleotide of claim 62, wherein the polynucleotide comprises a sequence that is at least 95% identical to SEQ ID NOs: 121-151.

64. The isolated polynucleotide of claim 63, wherein the polynucleotide comprises a sequence that is at least 99% identical to SEQ ID NOs: 121-151.

65. A vector comprising the polynucleotide of any one of claims 59-64.

66. A host cell comprising the vector of claim 65.

WHAT IS CLAIMED IS:

1. An invention not claimed in any divisional application.