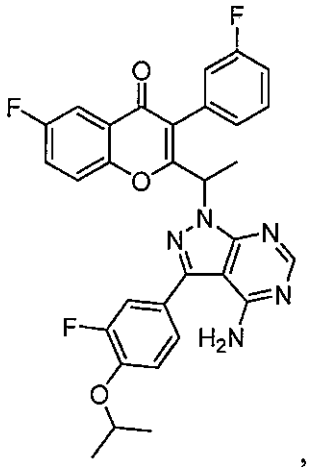
WHAT IS CLAIMED IS:

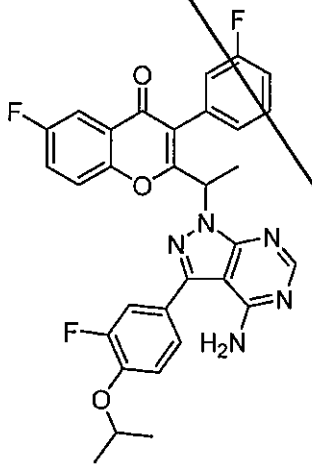
1. A method of inhibiting proliferation of a cell population comprising contacting the population with a combination comprising (i) a compound of formula A,



(A)

a stereoisomer thereof, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, (ii) and an anti-CD20 antibody or antigen-binding fragment thereof, wherein said anti-CD20 antibody or fragment binds to the same epitope as ublituximab.

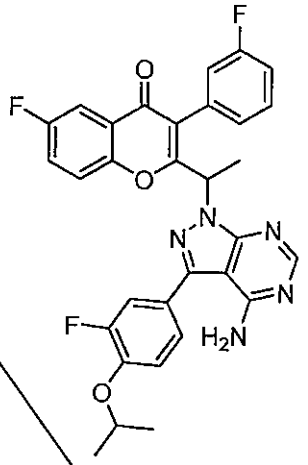
2. A method of inhibiting proliferation of a cell population comprising contacting the population with a combination comprising (i) a compound of formula A,



(A)

a stereoisomer thereof, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, and (ii) an anti-CD20 antibody or antigen-binding fragment thereof, wherein said anti-CD20 antibody or fragment exhibits a high affinity to Fc-gammaRIII (CD16).

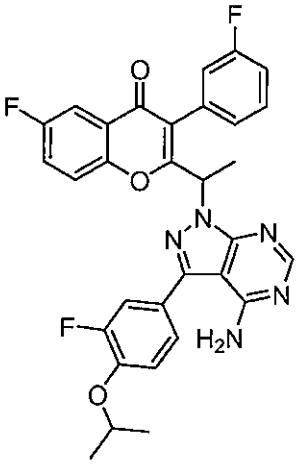
3. A method of inhibiting proliferation of a cell population comprising contacting the population with a combination comprising (i) a compound of formula A,



(A)

a stereoisomer thereof, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, and (ii) an anti-CD20 antibody or antigen-binding fragment thereof, wherein the fucose content of said antibody or fragment is less than 65%.

4. A method of inhibiting proliferation of a cell population comprising contacting the population with a combination comprising (i) a compound of formula A,



(A)

a stereoisomer thereof, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, and (ii) an anti-CD20 antibody or antigen-binding fragment thereof, wherein said antibody or fragment comprises the VH CDR1, CDR2 and CDR3 region of sequences SEQ ID NO:1, 2, and 3, and the VL CDR1, CDR2 and CDR3 region of sequences SEQ ID NO:6, 7, and 8.

5. The method of claim 4, wherein the anti-CD20 antibody or antigen-binding fragment thereof comprises the VH of SEQ ID NO:4 and the VL of SEQ ID NO:9.

6. The method of claim 5, wherein the anti-CD20 antibody is ublituximab.

7. The method of any one of claims 1-6, wherein said compound of fomula A is (RS)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one;
(S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; or
(R)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one.

8. The method of any one of claims 1-6, wherein said compound of foumla A is (S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one.

9. A method of inhibiting proliferation of a cell population comprising contacting the population with a combination comprising (i) at least one compound selected from the group consisting of 2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; (S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; and (R)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl) ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one, and (ii) at least one anti-CD20 antibody or antigen-binding fragment thereof.

10. A method of inhibiting proliferation of a cell population comprising contacting the population with a combination comprising (i) a compound selected from the group consisting of 2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; (S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; and (R)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl) ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one, and (ii) at least one anti-CD20 antibody or antigen-binding fragment thereof, wherein said anti-CD20 antibody or fragment thereof is selected from the group consisting of antibodies and fragments thereof that bind to the same epitope as ublituximab, rituximab, ofatumumab, ocrelizumab, veltuzumab, GA101, AME-133v, PRO131921, tositumomab, hA20, and PRO70769.

11. The method of any one of claims 1-10, wherein the population is contacted with a composition comprising (i) a compound selected from the group consisting of
2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one;
(S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; and
(R)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl) ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one, and
(ii) the anti-CD20 antibody.

12. The method of any one of claims 1-10, wherein the population is contacted with (i) a first composition comprising a compound selected from the group consisting of
2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one;
(S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; and
1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one, and
(ii) a second composition comprising the anti-CD20 antibody.

13. The method of any one of claims 1-12, wherein the anti-CD20 antibody is ublituximab.

14. The method of any one of claims 1-13, wherein the compound of formula A is (S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one.

15. The method of any one of claims 1-14, wherein the population comprises B-cells.

16. The method of any one of claims 1-15, wherein the population is in a human subject.

17. The method of claim 16, wherein the subject has a disease or disorder associated with excessive B-cell proliferation.

18. The method of claim 16, wherein the subject has cancer.

19. The method of claim 18, wherein the cancer is a hematological malignancy.

20. The method of claim 19, wherein the hematological malignancy is lymphoma or leukemia.

21. The method of claim 19, wherein the hematological malignancy is selected from the group consisting of acute lymphocytic leukemia (ALL), acute myeloid leukemia (AML), chronic lymphocytic leukemia (CLL), small lymphocytic lymphoma (SLL), multiple myeloma (MM), non-Hodgkin's lymphoma (NHL), mantle cell lymphoma (MCL), follicular lymphoma, Waldenstrom's macroglobulinemia (WM), B-cell lymphoma and diffuse large B-cell lymphoma (DLBCL).

22. The method of any one of claims 18-21, wherein the cancer overexpresses CD20.

23. The method of any one of claims 18-22, wherein the cancer is refractory to chemotherapy.

24. The method of claim 16, wherein the subject has an autoimmune disease or disorder.

25. The method of claim 24, wherein the autoimmune disease or disorder is allergic rhinitis, asthma, chronic obstructive pulmonary disease (COPD), or rheumatoid arthritis.

26. The method of any one of claims 16-25, wherein the subject is refractory to rituximab.

27. The method of any one of claims 16-26, wherein the subject has previously been treated with chemotherapy, rituximab, or a combination thereof.

28. The method of any one of claims 16-27, wherein said compound of formula A and said anti-CD20 antibody or fragment are administered to the subject sequentially.

29. The method of any one of claims 16-27, wherein said compound of formula A and said anti-CD20 antibody or fragment are administered to the subject simultaneously.

30. The method of claim 29, wherein said compound of formula A and said anti-CD20 antibody or fragment are contained in the same pharmaceutical composition.

31. The method of claim 29, wherein said compound of formula A and and said anti-CD20 antibody or fragment are in separate pharmaceutical compositions.

32. The method of any of claims 16-31, further comprising administering at least one additional therapeutic agent to the subject.

33. The method of claim 32, wherein the additional therapeutic agent is selected from the group consisting of a proteasome inhibitor, Bortezomib (Velcade®), Carfilzomib (PR-171), PR-047, disulfiram, lactacystin, PS-519, eponemycin, epoxomycin, aclacinomycin, CEP-1612, MG-132, CVT-63417, PS-341, vinyl sulfone tripeptide inhibitors, ritonavir, PI-083, (+/-)-7-methylomuralide, (-)-7-methylomuralide, lenalidomide, and combinations thereof.

34. The method of any one of claims 16-31, further comprising administering at least two additional therapeutic agents to the subject, wherein the two additional therapeutic agents are selected from the group consisting of:
a) CHOP (cyclophosphamide, doxorubicin, vincristine, prednisone);

b) R-CHOP (rituximab-CHOP);

c) hyperCV AD (hyperfractionated cyclophosphamide, vincristine, doxorubicin, dexamethasone, methotrexate, cytarabine);

d) R-hyperCV AD (rituximab-hyperCV AD);

e) FCM (fludarabine, cyclophosphamide, mitoxantrone);

f) R-FCM (rituximab, fludarabine, cyclophosphamide, mitoxantrone);

g) bortezomib and rituximab;

h) temsirolimus and rituximab;

i) temsirolimus and Velcade.RTM.;

j) Iodine-131 tositumomab (Bexxar.RTM.) and CHOP;

k) CVP (cyclophosphamide, vincristine, prednisone);

l) R-CVP (rituximab-CVP);

m) ICE (iphosphamide, carboplatin, etoposide);

n) R-ICE (rituximab-ICE);

o) FCR (fludarabine, cyclophosphamide, rituximab);

p) FR (fludarabine, rituximab); and

q) D.T. PACE (Dexamethasone, Thalidomide, Cisplatin, Adriamycin, Cyclophosphamide, Etoposide).

35. A method for depleting B-cells comprising contacting a composition comprising B-cells with (i) at least one compound of formula A selected from the group consisting of 2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one;
(S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; and
(R)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl) ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one, and
(ii) at least one anti-CD20 antibody or antigen-binding fragment thereof.

36. A method for promoting apoptosis comprising contacting a B-cell with (i) at least one compound of formula A selected from the group consisting of

2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one;
(S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; and
(R)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl) ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one, and
(ii) at least one anti-CD20 antibody or antigen-binding fragment thereof.

37. A method for promoting cell-cycle arrest comprising contacting a cell with (i) at least one compound of formula A selected from the group consisting of
2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one;
(S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; and
(R)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl) ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one,
and (ii) at leaset one anti-CD20 antibody or antigen-binding fragment thereof.

38. The method of any one of claims 35-37, wherein said anti-CD20 antibody is ublituximab.

39. The method of any one of claims 35-38, wherein said compound of formula A is (S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one.

40. The method of any one of claims 35-39, wherein said compound of formula A and said anti-CD20 antibody or fragment are delivered sequentially.

41. The method of any one of claims 35-39, wherein said compound of formula A and said anti-CD20 antibody or fragment are delivered simultaneously.

42. The method of claim 41, wherein said compound of formula A and said anti-CD20 antibody or fragment are delivered in the same composition.

43. The method of claim 41, wherein said compound of formula A and said anti-CD20 antibody or fragment are delivered in separate compositions.

44. A kit comprising (i) a compound of foumula A, a stereoisomer thereof, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, and (ii) instructions for using said compound A in combination with an anti-CD20 antibody or antigen-binding fragment thereof, wherein said anti-CD20 antibody or fragment (a) binds to the same epitope as ublituximab, (b) exhibits a high affinity to Fc-gammaRIII (CD16), or (c) or has a fucose content of less than 65%.

45. A kit comprising (i) at least one compound selected from the group consisting of
2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one;
(S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one;
and
(R)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl) ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one, and
(ii) and instructions for using the compound in combination with an anti-CD20 antibody or antigen-binding fragment thereof.

46. The kit of claim 45, wherein the kit further comprises the anti-CD20 antibody or fragment.

47. A kit comprising (i) at least one anti-CD20 antibody or antigen-binding fragment thereof and (ii) instructions for using the anti-CD20 antibody or fragment in combination with at least one compound selected from the group consisting of
2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one;
(S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one;
and
(R)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl) ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one,

wherein said anti-CD20 antibody or a fragment thereof (a) binds to the same epitope as ublituximab, (b) exhibits a high affinity to Fc-gammaRIII (CD16), or (c) has a fucose of less than 65%.

48. A kit comprising (i) at least one anti-CD20 antibody or antigen-binding fragment thereof and (ii) instructions for using the anti-CD20 antibody or fragment in combination with at least one compound selected from the group consisting of
2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one;
(S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; and,
(R)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl) ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one.

49. A kit comprising (i) a compound selected from the group consisting of
2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one;
(S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one;
and
(R)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl) ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one,
and (ii) an anti-CD20 antibody or antigen-binding fragment thereof, wherein said anti-CD20 antibody or fragment (a) binds to the same epitope as ublituximab, (b) exhibits a high affinity to Fc-gammaRIII (CD16), or (c) has a fucose content of less than 65%.

50. A kit comprising (i) a compound selected from the group consisting of
2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one;
(S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one;
and

(R)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl) ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one,
and (ii) an anti-CD20 antibody or antigen-binding fragment thereof.

51. The kit of any one of claims 44-50, wherein said anti-CD20 antibody is ublituximab.

52. The method of any one of claims 44-51, wherein said compound of formulat A is (S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one.

53. The kit of any one of claims 49-52, wherein said anti-CD20 antibody or fragment and said compound are contained within the same composition.

54. The kit of any one of claims 49-52, wherein said anti-CD20 antibody or fragment and said compound are in separate compositions.

55. The kit of any one of claims 44-54, further comprising one or more additional active agents.

56. A pharmaceutical composition comprising a compound selected from the group consisting of
2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one;
(S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one;
and
(R)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl) ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one,
and an anti-CD20 antibody or antigen-binding fragment thereof.

57. A pharmaceutical composition comprising a compound selected from the group consisting of
2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one;

(S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one;
and
(R)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl) ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one,
and an anti-CD20 antibody or antigen-binding fragment thereof, wherein said anti-CD20 antibody or fragment (a) binds to the same epitope as ublituximab, (b) exhibits a high affinity to Fc-gammaRIII (CD16), or (c) has a fucose content less than 65%.

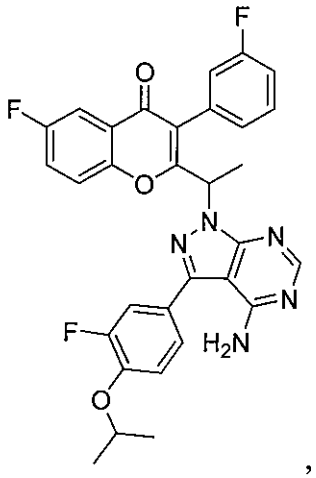
58. The pharmaceutical composition of claim 56 or 57, wherein said anti-CD20 antibody is ublituximab.

59. The pharmaceutical composition of any one of claims 56-58, wherein said compound of formula A is (S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one.

WHAT IS CLAIMED IS:

1. A method of inhibiting proliferation of a cell population comprising contacting the population with a combination comprising

(i) a compound of formula A,



(A)

a stereoisomer thereof, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, and

(ii) an anti-CD20 antibody or antigen-binding fragment thereof, wherein said anti-CD20 antibody or fragment (a) binds to the same epitope as ublituximab, (b) exhibits a high affinity to Fc-gammaRIII (CD16) or (c) has a fucose content less than 65%.

2. The method of Claim 1, wherein said antibody or fragment comprises the VH CDR1, CDR2 and CDR3 region of sequences SEQ ID NO: 1, 2, and 3, and the VL CDR1, CDR2 and CDR3 region of sequences SEQ ID NO: 6, 7, and 8.

3. The method of claim 2, wherein the anti-CD20 antibody or antigen-binding fragment thereof comprises the VH of SEQ ID NO: 4 and the VL of SEQ ID NO: 9.

4. The method of any one of claims 1-3, wherein said compound of formula A is (RS)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; (S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; or

(R)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one.

5. A method of inhibiting proliferation of a cell population comprising contacting the population with a combination comprising

(i) at least one compound selected from the group consisting of (RS)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; (S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; and (R)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl) ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one, and

(ii) at least one anti-CD20 antibody or antigen-binding fragment thereof.

6. The method of Claim 5, wherein said anti-CD20 antibody or fragment thereof is selected from the group consisting of antibodies and fragments thereof that bind to the same epitope as ublituximab, rituximab, ofatumumab, ocrelizumab, veltuzumab, GA101, AME-133v, PRO131921, tositumomab, hA20, and PRO70769.

7. The method of any one of claims 1-6, wherein the population is contacted with a composition comprising

(i) a compound selected from the group consisting of (RS)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; (S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; and (R)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl) ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one, and

(ii) the anti-CD20 antibody.

8. The method of any one of claims 1-6, wherein the population is contacted with

(i) a first composition comprising a compound selected from the group consisting of (RS)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-

6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; (S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; and (R)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one, and

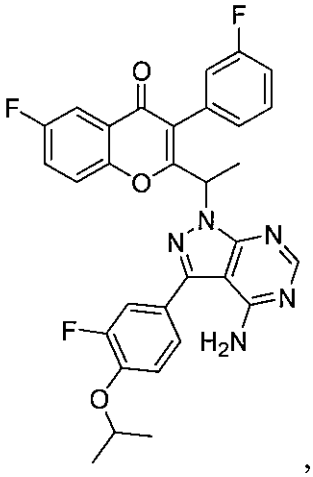
(ii) a second composition comprising the anti-CD20 antibody.

9. The method of any one of claims 1-8, wherein the anti-CD20 antibody is ublituximab.

10. The method of any one of claims 1-9, wherein the compound of formula A is (S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one.

11. The method of any one of claims 1-10, wherein the population comprises B-cells.

12. A compound of (i) formula A,



(A)

a stereoisomer thereof, or a pharmaceutically acceptable salt, solvate, or prodrug thereof and (ii) an anti-CD20 antibody or antigen-binding fragment thereof, wherein said anti-CD20 antibody or fragment (a) binds to the same epitope as ublituximab, (b) exhibits a high affinity to Fc-gammaRIII (CD16) or (c) has a fucose content less than 65%, in therapeutic combination for use as a medicament.

13. The compounds of claim 12, wherein the medicament is for treating a disease or disorder associated with excessive B-cell proliferation, cancer or an autoimmune disease or disorder.

14. The compounds of claim 13, wherein the cancer is a hematological malignancy.

15. The compounds of claim 14, wherein the hematological malignancy is lymphoma or leukemia.

16. The compounds of claim 15, wherein the hematological malignancy is selected from the group consisting of acute lymphocytic leukemia (ALL), acute myeloid leukemia (AML), chronic lymphocytic leukemia (CLL), small lymphocytic lymphoma (SLL), multiple myeloma (MM), non-Hodgkin's lymphoma (NHL), mantle cell lymphoma (MCL), follicular lymphoma, Waldenstrom's macroglobulinemia (WM), B-cell lymphoma and diffuse large B-cell lymphoma (DLBCL).

17. The compounds of any one of claims 12-16, wherein the cancer overexpresses CD20.

18. The compounds of any one of claims 12-17, wherein the cancer is refractory to chemotherapy.

19. The compounds of claim 13, wherein the autoimmune disease or disorder is allergic rhinitis, asthma, chronic obstructive pulmonary disease (COPD), or rheumatoid arthritis.

20. The compounds of any one of claims 12-19, wherein the subject is refractory to rituximab.

21. The compounds of any one of claims 12-20, wherein the subject has previously been treated with chemotherapy, rituximab, or a combination thereof.

22. The compounds of any one of claims 12-21, wherein said compound of formula A and said anti-CD20 antibody or fragment are administered to the subject sequentially or simultaneously.

23. The compounds of claim 22, wherein said compound of formula A and said anti-CD20 antibody or fragment are contained in the same composition or separate pharmaceutical compositions.

24. The compounds of any one of claims 12-23, wherein said therapeutic combination comprises at least one additional therapeutic agent.

25. The compounds of claim 25, wherein the additional therapeutic agent is selected from the group consisting of a proteasome inhibitor, Bortezomib (Velcade®), Carfilzomib (PR-171), PR-047, disulfiram, lactacystin, PS-519, eponemycin, epoxomycin, aclacinomycin, CEP-1612, MG-132, CVT-63417, PS-341, vinyl sulfone tripeptide inhibitors, ritonavir, PI-083, (+/-)-7-methylomuralide, (-)-7-methylomuralide, lenalidomide, and combinations thereof.

26. The compounds of any one of claims 12-25, wherein said therapeutic combination comprises at least two additional therapeutic agents selected from the group consisting of:

a) CHOP (cyclophosphamide, doxorubicin, vincristine, prednisone);

b) R-CHOP (rituximab-CHOP);

c) hyperCV AD (hyperfractionated cyclophosphamide, vincristine, doxorubicin, dexamethasone, methotrexate, cytarabine);

d) R-hyperCV AD (rituximab-hyperCV AD);

e) FCM (fludarabine, cyclophosphamide, mitoxantrone);

f) R-FCM (rituximab, fludarabine, cyclophosphamide, mitoxantrone);

g) bortezomib and rituximab;

h) temsirolimus and rituximab;

i) temsirolimus and Velcade.RTM.;

j) Iodine-131 tositumomab (Bexxar.RTM.) and CHOP;

k) CVP (cyclophosphamide, vincristine, prednisone);

l) R-CVP (rituximab-CVP);

m) ICE (iphosphamide, carboplatin, etoposide);

n) R-ICE (rituximab-ICE);

o) FCR (fludarabine, cyclophosphamide, rituximab);

p) FR (fludarabine, rituximab); and

q) D.T. PACE (Dexamethasone, Thalidomide, Cisplatin, Adriamycin, Cyclophosphamide, Etoposide).

27. A method for depleting B-cells comprising contacting a composition comprising B-cells with

(i) at least one compound of formula A selected from the group consisting of (RS)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; (S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; and (R)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl) ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one, and

(ii) at least one anti-CD20 antibody or antigen-binding fragment thereof.

28. A method for promoting apoptosis comprising contacting a B-cell with

(i) at least one compound of formula A selected from the group consisting of (RS)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; (S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; and (R)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl) ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one, and

(ii) at least one anti-CD20 antibody or antigen-binding fragment thereof.

29. A method for promoting cell-cycle arrest comprising contacting a cell with

(i) at least one compound of formula A selected from the group consisting of (RS)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; (S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-

pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; and (R)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl) ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one, and

(ii) at least one anti-CD20 antibody or antigen-binding fragment thereof.

30. The method of any one of claims 27-29, wherein said anti-CD20 antibody is ublituximab.

31. The method of any one of claims 27-29, wherein said compound of formula A is (S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one.

32. The method of any one of claims 27-29, wherein said compound of formula A and said anti-CD20 antibody or fragment are delivered sequentially or simultaneously.

33. The method of claim 32, wherein said compound of formula A and said anti-CD20 antibody or fragment are delivered in the same composition or in separate compositions.

34. A kit comprising

(i) a compound of formula A, a stereoisomer thereof, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, and

(ii) instructions for using said compound A in combination with an anti-CD20 antibody or antigen-binding fragment thereof, wherein said anti-CD20 antibody or fragment (a) binds to the same epitope as ublituximab, (b) exhibits a high affinity to Fc-gammaRIII (CD16) or (c) or has a fucose content of less than 65%.

35. A kit comprising

(i) at least one anti-CD20 antibody or antigen-binding fragment thereof and

(ii) instructions for using the anti-CD20 antibody or fragment in combination with at least one compound selected from the group consisting of (RS)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; (S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-

d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; and (R)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl) ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one.

36. A kit comprising

(i) a compound of formula A is selected from the group consisting of (RS)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; (S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; and (R)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl) ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one, and

(ii) instructions for using the compound in combination with an anti-CD20 antibody or antigen-binding fragment thereof.

37. The kit of claim 36, wherein the kit further comprises the anti-CD20 antibody or fragment.

38. A kit comprising

(i) a compound selected from the group consisting of (RS)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; (S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one;and (R)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl) ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one, and

(ii) an anti-CD20 antibody or antigen-binding fragment thereof.

39. The kit of any one of Claims 34-38, wherein said anti-CD20 antibody or a fragment thereof (a) binds to the same epitope as ublituximab, (b) exhibits a high affinity to Fc-gammaRIII (CD16), or (c) has a fucose of less than 65%.

40. The kit of any one of claims 34-39, wherein said anti-CD20 antibody is ublituximab.

41. The method of any one of claims 34-40, wherein said compound of formulat A is (S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one.

42. The kit of any one of claims 34-41, wherein said anti-CD20 antibody or fragment and said compound are contained within the same composition in separate compositions.

43. The kit of any one of claims 34-42, further comprising one or more additional active agents.

44. A pharmaceutical composition comprising

(i) a compound of formula A selected from the group consisting of (RS)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; (S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one; and (R)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl) ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one, and

(ii) an anti-CD20 antibody or antigen-binding fragment thereof.

45. The pharmaceutical composition of Claim 44, wherein said anti-CD20 antibody or fragment (a) binds to the same epitope as ublituximab, (b) exhibits a high affinity to Fc-gammaRIII (CD16), or (c) has a fucose content less than 65%.

46. The pharmaceutical composition of claim 44 or 45, wherein said anti-CD20 antibody is ublituximab.

47. The pharmaceutical composition of any one of claims 44-46, wherein said compound of formula A is (S)-2-(1-(4-amino-3-(3-fluoro-4-isopropoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)ethyl)-6-fluoro-3-(3-fluorophenyl)-4H-chromen-4-one.