WHAT IS CLAIMED IS:

1. A method for treating a hematological malignancy in an individual in need thereof, comprising:

    a. administering to the individual an amount of an irreversible Btk inhibitor sufficient to mobilize a plurality of cells from the malignancy; and

    b. analyzing the mobilized plurality of cells.

2. The method of claim 1, wherein the amount of the irreversible Btk inhibitor is sufficient to induce lymphocytosis of a plurality of cells from the malignancy.

3. The method of claim 2, wherein the malignancy is CLL.

4. The method of claim 1, wherein treating the hematological malignancy comprises managing the hematological malignancy.

5. The method of claim 1, wherein the hematological malignancy is a B-cell malignancy.

6. The method of claim 1, wherein the hematological malignancy is a leukemia, lymphoproliferative disorder, or myeloid.

7. The method of claim 1, wherein the mobilized cells are myeloid cells or lymphoid cells.

8. The method of claim 1, wherein analyzing the mobilized plurality of cells comprises measuring the peripheral blood concentration of the mobilized plurality of cells.

9. The method of claim 8, further comprising administering a second cancer treatment regimen after the peripheral blood concentration of the mobilized plurality of cells increases as compared to the concentration before administration of the Btk inhibitor.

10. The method of claim 8, wherein administering the second cancer treatment regimen occurs after a subsequent decrease in peripheral blood concentration of the mobilized plurality of cells.

11. The method of claim 1, wherein analyzing the mobilized plurality of cells comprises measuring the duration of an increase in the peripheral blood concentration of the mobilized plurality of cells as compared to the concentration before administration of the Btk inhibitor.

12. The method of claim 11, further comprising administering a second cancer treatment regimen after the peripheral blood concentration of the mobilized plurality of cells has increased for a predetermined length of time.

13. The method of claim 1, wherein analyzing the mobilized plurality of cells comprises counting the number of mobilized plurality of cells in the peripheral blood.

14. The method of claim 13, further comprising administering a second cancer treatment regimen after the number of mobilized plurality of cells in the peripheral blood increases as compared to the number before administration of the Btk inhibitor.

15. The method of claim 14, wherein administering the second cancer treatment regimen occurs after a subsequent decrease in the number of mobilized plurality of cells in the peripheral blood.

16. The method of claim 1, wherein analyzing the mobilized plurality of cells comprises measuring the duration of an increase in the number of mobilized plurality of cells in the peripheral blood as compared to the number before administration of the Btk inhibitor.

17. The method of claim 16, further comprising administering a second cancer treatment regimen after the number of mobilized plurality of cells in the peripheral blood has increased for a predetermined length of time.

18. The method of claim 1, wherein analyzing the mobilized plurality of cells comprises preparing a biomarker profile for a population of cells isolated from the plurality of cells, wherein the biomarker profile indicates the expression of a biomarker, the expression level of a biomarker, mutations in a biomarker, or the presence of a biomarker.

19. The method of claim 18, wherein the biomarker is any cytogenetic, cell surface molecular or protein or RNA expression marker.

20. The method of claim 18, wherein the biomarker is: ZAP70; t(14,18); β-2 microglobulin; p53 mutational status; ATM mutational status; del(17)p; del(11)q; del(6)q; CD5; CD11c; CD19; CD20; CD22; CD25; CD38; CD103; CD138; secreted, surface or cytoplasmic immunoglobulin expression; V_H mutational status; or a combination thereof.

21. The method of claim 18, further comprising providing a second cancer treatment regimen based on the biomarker profile.

22. The method of claim 18, further comprising not administering based on the biomarker profile.

23. The method of claim 18, further comprising predicting the efficacy of a second cancer treatment regimen based on the biomarker profile.

24. The method of claim 1, wherein the hematological malignancy is a chronic lymphocytic leukemia (CLL), small lymphocytic lymphoma (SLL), high risk CLL, or a non-CLL/SLL lymphoma.

25. The method of claim 1, wherein the hematological malignancy is follicular lymphoma, diffuse large B-cell lymphoma (DLBCL), mantle cell lymphoma, Waldenstrom's macroglobulinemia, multiple myeloma, marginal zone lymphoma, Burkitt's lymphoma, non-Burkitt high grade B cell lymphoma, or extranodal marginal zone B cell lymphoma.

26. The method of claim 1, wherein the hematological malignancy is acute or chronic myelogenous (or myeloid) leukemia, myelodysplastic syndrome, or acute lymphoblastic leukemia.

27. The method of claim 1, wherein the hematological malignancy is relapsed or refractory diffuse large B-cell lymphoma (DLBCL), relapsed or refractory mantle cell lymphoma, relapsed or refractory follicular lymphoma, relapsed or refractory CLL; relapsed or refractory SLL; relapsed or refractory multiple myeloma.

28. The method of claim 1, wherein the Btk inhibitor forms a covalent bond with a cysteine sidechain of a Bruton's tyrosine kinase, a Bruton's tyrosine kinase homolog, or a Btk tyrosine kinase cysteine homolog.

29. The method of claim 1, wherein the irreversible Btk inhibitor is (R)-1-(3-(4-amino-3-(4-phenoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-1-yl)piperidin-1-yl)prop-2-en-1-one.

30. The method of claim 1, wherein the amount of the irreversible Btk inhibitor is from 300 mg/day up to, and including, 1000 mg/day.

31. The method of claim 1, wherein the amount of the irreversible Btk inhibitor is from 420 mg/day up to, and including, 840 mg/day.

32. The method of claim 1, wherein the amount of the irreversible Btk inhibitor is about 420 mg/day, about 560 mg/day, or about 840 mg/day.

33. The method of claim 1, wherein the amount of the irreversible Btk inhibitor is about 420 mg/day.

34. The method of claim 1, wherein the AUC_{0-24} of the Btk inhibitor is between about 150 and about 3500 ng*h/mL.

35. The method of claim 34, wherein AUC_{0-24} of the Btk inhibitor is between about 500 and about 1100 ng*h/mL.

36. The method of claim 1, wherein the Btk inhibitor is administered orally.

37. The method of claim 1, wherein the Btk inhibitor is administered once per day, twice per day, or three times per day.

38. The method of claim 1, wherein the Btk inhibitor is administered until disease progression, unacceptable toxicity, or individual choice.

39. The method of claim 1, wherein the Btk inhibitor is administered daily until disease progression, unacceptable toxicity, or individual choice.

40. The method of claim 1, wherein the Btk inhibitor is administered every other day until disease progression, unacceptable toxicity, or individual choice.

41. The method of claim 1, wherein the Btk inhibitor is a front line therapy, second line therapy, third line therapy, fourth line therapy, fifth line therapy, or sixth line therapy.

42. The method of claim 1, wherein the Btk inhibitor treats a refractory hematological malignancy.

43. The method of claim 1, wherein the Btk inhibitor is a maintenance therapy.

44. The method of claim 9, 10, 12, 14, 15, 17, or 21, wherein the second cancer treatment regimen comprises a chemotherapeutic agent, a steroid, an immunotherapeutic agent, a targeted therapy, or a combination thereof.

45. The method of claim 9, 10, 12, 14, 15, 17, or 21, wherein the second cancer treatment regimen comprises a B cell receptor pathway inhibitor.

46. The method of claim 45, wherein the B cell receptor pathway inhibitor is a CD79A inhibitor, a CD79B inhibitor, a CD19 inhibitor, a Lyn inhibitor, a Syk inhibitor, a PI3K inhibitor, a Blnk inhibitor, a PLCγ inhibitor, a PKCβ inhibitor, or a combination thereof.

47. The method of claim 9, 10, 12, 14, 15, 17, or 21, wherein the second cancer treatment regimen comprises an antibody, B cell receptor signaling inhibitor, a PI3K inhibitor, an IAP inhibitor, an mTOR inhibitor, a radioimmunotherapeutic, a DNA damaging agent, a proteosome inhibitor, a histone deacetylase inhibitor, a protein kinase inhibitor, a hedgehog inhibitor, an Hsp90 inhibitor, a telomerase inhibitor, a Jak1/2 inhibitor, a protease inhibitor, a PKC inhibitor, a PARP inhibitor, or a combination thereof.

48. The method of claim 9, 10, 12, 14, 15, 17, or 21, wherein the second cancer treatment regimen comprises chlorambucil, ifosphamide, doxorubicin, mesalazine, thalidomide, lenalidomide, temsirolimus, everolimus, fludarabine, fostamatinib, paclitaxel, docetaxel, ofatumumab, rituximab, dexamethasone, prednisone, CAL-101, ibritumomab, tositumomab, bortezomib, pentostatin, endostatin, or a combination thereof.

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