CLAIMS

We claim:

1. Use of a farnesyltransferase inhibitor (FTI), optionally tipifarnib, in the manufacture of a medicament for the treatment of a CXCL12-expressing cancer in a subject, wherein the cancer is peripheral T-cell lymphoma (PTCL) or acute myeloid leukemia (AML).

2. The use of claim 1, wherein the PTCL is relapsed or refractory PTCL.

3. The use of claim 1, wherein the PTCL is AITL.

4. The use of claim 3, wherein the AITL is relapsed or refractory AITL.

5. The use of claim 1, wherein the AML is newly diagnosed AML.

6. The use of claim 1 or 5, wherein the subject having AML is either an elderly patient, unfit for chemotherapy, or with poor-risk AML.

7. The use of claim 1, 5 or 6, wherein the AML is relapsed or refractory AML.

8. The use of any one of claims 1-7, wherein the FTI, optionally tipifarnib, is to be selectively administered to a subject having a ratio of an expression level of CXCL12 to an expression level of CXCR4 that is higher than a reference ratio.

9. The use of claim 8, wherein the reference ratio is 1/10, 1/9, 1/8, 1/7, 1/6, 1/5, 1/4, 1/3, 1/2, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10.

10. The use of any one of claims 1-9, wherein the FTI, optionally tipifarnib, is to be selectively administered to a subject having an expression level of an additional gene that is higher than a reference expression level of the additional gene.

11. The use of claim 10, wherein the additional gene is CXCL13 and/or PD-1.

12. The use of any one of claims 1-11, wherein the FTI, optionally tipifarnib, is to be selectively administered to a subject that does not have a single nucleotide variant (SNV) in the 3’ UTR of CXCL12.

13. The use of claim 12, wherein the SNV in the 3’ UTR of CXCL12 is rs2839695.

14. The use of any one of claims 1-13, wherein the FTI, optionally tipifarnib, is to

be selectively administered to a subject having a single nucleotide variant in SIK3.

15. The use of any one of claims 1-14, wherein the FTI, optionally tipifarnib, is to be selectively administered to a subject having a R2729Q variant in CENPF.

16. The use of any one of claims 1-15, wherein the FTI, optionally tipifarnib, is to be administered at a dose of 0.05-500 mg/kg body weight.

17. The use of any one of claims 1-16, wherein the FTI, optionally tipifarnib, is to be administered twice a day.

18. The use of claim 17, wherein the FTI, optionally tipifarnib, is to be administered at a dose of 200-1200 mg twice a day.

19. The use of claim 17, wherein the FTI, optionally tipifarnib, is to be administered at a dose of 100 mg, 200 mg, 300 mg, 400 mg, 600 mg, 900 mg or 1200 mg twice a day.

20. The use of any one of claims 1-15, wherein the FTI, optionally tipifarnib, is to be administered on days 1-7 and 15-21 of a 28-day treatment cycle.

21. The use of any one of claims 1-15, wherein the FTI, optionally tipifarnib, is to be administered on days 1-21 of a 28-day treatment cycle.

22. The use of any one of claims 1-15, wherein the FTI, optionally tipifarnib, is to be administered on days 1-7 of a 28-day treatment cycle.

23. The use of claim 22, wherein the FTI, optionally tipifarnib, is to be administered for at least 1 cycle.

24. The use of any one of claims 21-23, wherein the FTI, optionally tipifarnib, is to be administered at a dose of 900 mg twice a day.

25. The use of any one of claims 21-23, wherein the FTI, optionally tipifarnib, is to be administered at a dose of 600 mg twice a day.

26. The use of any one of claims 21-23, wherein the FTI, optionally tipifarnib, is to be administered at a dose of 400 mg twice a day.

27. The use of any one of claims 21-23, wherein the FTI, optionally tipifarnib, is to be administered at a dose of 300 mg twice a day.

28. The use of any one of claims 21-23, wherein the FTI, optionally tipifarnib, is to be administered at a dose of 200 mg twice a day.

29. The use of any one of claims 1-28, wherein the FTI, optionally tipifarnib, is to be administered before, during, or after radiation.

30. The use of any one of claims 1-29, wherein the FTI, optionally tipifarnib, is to be administered in combination with a therapeutically effective amount of a second active agent or a support care therapy.

31. Use of a farnesyltransferase inhibitor (FTI), optionally tipifarnib, in the manufacture of a medicament for the treatment of an angioimmunoblastic T-cell lymphoma (AITL) in a subject.

32. The use of claim 31, wherein the AITL is relapsed or refractory AITL.

33. The use of claim 31 or 32, wherein the FTI, optionally tipifarnib, is to be selectively administered to the subject on the basis that the subject has a tumor of AITL histology.

34. The use of claim 33, wherein the AITL histology is characterized by a tumor cell component.

35. The use of claim 34, wherein the tumor cell component comprises polymorphous medium-sized neoplastic cells derived from follicular helper T cells.

36. The use of claim 33, wherein the AITL histology is characterized by a non-tumor cell component.

37. The use of claim 36, wherein the non-tumor cell component comprises prominent arborizing blood vessels.

38. The use of claim 36 or 37, wherein the non-tumor cell component comprises proliferation of follicular dendritic cells.

39. The use of any one of claims 36-38, wherein the non-tumor cell component

comprises scattered EBV positive B-cell blasts.

40. The use of any one of claims 31-39, wherein the subject having AITL has been diagnosed with AITL.

41. The use of claim 40, wherein diagnosis with AITL comprises visualization of a non-tumor component.

42. The use of claim 40, wherein diagnosis with AITL comprises visualization of proliferation of endothelial venules.

43. The use of claim 40, wherein diagnosis with AITL comprises detecting the presence of one or more of the following tumor markers: CXCL13, CD10, PD1, and BCL6.

44. The use of any one of claims 31-43, wherein the FTI, optionally tipifarnib, is to be administered orally, parenterally, rectally, or topically.

45. The use of any one of claims 31-44, wherein the FTI, optionally tipifarnib, is to be administered at a dose of 0.05-500 mg/kg body weight.

46. The use of any one of claims 31-45, wherein the FTI, optionally tipifarnib, is to be administered twice a day.

47. The use of any one of claims 31-46, wherein the FTI, optionally tipifarnib, is to be administered at a dose of 200-1200 mg twice a day.

48. The use of claim 46, wherein the FTI, optionally tipifarnib, is to be administered at a dose of 100 mg, 200 mg, 300 mg, 400 mg, 600 mg, 900 mg or 1200 mg twice a day .

49. The use of any one of claims 31-44, wherein the FTI, optionally tipifarnib, is to be administered on days 1-7 and 15-21 of a 28-day treatment cycle.

50. The use of any one of claims 31-44, wherein the FTI, optionally tipifarnib, is to be administered on days 1-21 of a 28-day treatment cycle.

51. The use of any one of claims 31-44, wherein the FTI, optionally tipifarnib, is to be administered on days 1-7 of a 28-day treatment cycle.

52. The use of any one of claims 49-51, wherein the FTI, optionally tipifarnib, is to be administered for at least 1 cycle.

53. The use of any one of claims 49-51, wherein the FTI, optionally tipifarnib, is to be administered at a dose of 900 mg twice a day

54. The use of any one of claims 49-51, wherein the FTI, optionally tipifarnib, is to be administered at a dose of 600 mg twice a day.

55. The use of any one of claims 49-51, wherein the FTI, optionally tipifarnib, is to be administered at a dose of 400 mg twice a day

56. The use of any one of claims 49-51, wherein the FTI, optionally tipifarnib, is to be administered at a dose of 300 mg twice a day.

57. The use of any one of claims 49-51, wherein the FTI, optionally tipifarnib, is to be administered at a dose of 200 mg twice a day.

58. The use of any one of claims 31-57, wherein the FTI, optionally tipifarnib, is to be administered before, during, or after radiation.

59. The use of any one of claims 31-58, wherein the FTI, optionally tipifarnib, is to be administered in combination with a therapeutically effective amount of a second active agent or a support care therapy.

60. The use of claim 59, wherein the second active agent is a histone deacetylase, an antifolate, or chemotherapy.