CLAIMS

1. A method of treating splenomegaly in a human subject in need thereof comprising administering a Bruton's Tyrosine Kinase (BTK) inhibitor to the human subject.
2. The method of claim 1, wherein the human subject has an accumulation of malignant CD34+ myeloid cells in their spleen.
3. The method of claim 2, wherein the malignant CD34+ myeloid cells have decreased expression of CXCR4 relative to normal myeloid cells.
4. The method of claim 2, wherein the BTK inhibitor is administered in an amount sufficient to stimulate migration of the malignant CD34+ myeloid cells to peripheral blood of the human subject.
5. The method of claim 2, wherein the BTK inhibitor is administered in an amount sufficient to decrease activity of VLA-4 in the malignant CD34+ myeloid cells.
6. The method of claim 2, wherein the BTK inhibitor is administered in an amount sufficient to decrease expression of VLA-4 in the malignant CD34+ myeloid cells.
7. The method of any preceding claim wherein the human subject is suffering from myelofibrosis.
8. A method of stimulating migration of malignant CD34+ myeloid cells from the spleen to the peripheral blood in a human subject suffering from splenomegaly, comprising administering a BTK inhibitor to the human subject.
9. The method of claim 8, wherein the human subject has an accumulation of malignant CD34+ myeloid cells in the spleen.
10. The method of claim 8, wherein the malignant CD34+ myeloid cells have decreased expression of CXCR4 relative to normal myeloid cells.
11. The method of claim 8, wherein the human subject is suffering from myelofibrosis.
12. The method of claim 7 or 11, wherein the myelofibrosis is selected from the group consisting of primary myelofibrosis (PMF), post-polycythemia vera myelofibrosis (post PV-MF), and post-essential thrombocythemia myelofibrosis (post ET-MF).
13. The method of any preceding claim, wherein the human subject did not respond to ruxolitinib therapy.
14. The method of any preceding claim, wherein the human subject has a JAK2V617F mutation.
15. The method of claim 14, wherein the human subject has acute myeloid leukemia (AML) secondary to a myeloproliferative neoplasm (MPN).

16. The method of any of claims 1-13, wherein the human subject does not have a JAK2V617F mutation.
17. The method of claim 16, wherein the human subject has acute myeloid leukemia secondary to a myeloproliferative neoplasm.
18. The method of any preceding claim, wherein the human subject has not been treated with a JAK2 inhibitor.
19. The method of any preceding claim, wherein the human subject is intolerant to a JAK2 inhibitor.
20. The method of any preceding claim, wherein the human subject is ineligible for treatment with a JAK2 inhibitor.
21. The method of any preceding claim, wherein the human subject is relapsed following JAK2 inhibitor treatment or is refractory to JAK2 inhibitor treatment.
22. The method of any preceding claim, wherein the BTK inhibitor is administered once daily at a dose selected from the group consisting of 15 mg, 25 mg, 30 mg, 50 mg, 60 mg, 75 mg, 90 mg, 100 mg, 120 mg, 150 mg, 175 mg, 180 mg, 200 mg, 225 mg, 240 mg, 250 mg, 275 mg, 300 mg, 325 mg, 350 mg, 360 mg, 375 mg, 480 mg and 560 mg.
23. The method of any preceding claim, wherein the BTK inhibitor is administered twice daily at a dose selected from the group consisting of 15 mg, 25 mg, 30 mg, 50 mg, 60 mg, 75 mg, 90 mg, 100 mg, 120 mg, 150 mg, 175 mg, 180 mg, 200 mg, 225 mg, 240 mg, 250 mg, 275 mg, 300 mg, 325 mg, 350 mg, 360 mg, 375 mg, 480 mg and 560 mg.
24. The method of any preceding claim, wherein the BTK inhibitor is orally administered.
25. The method of any preceding claim, wherein the BTK inhibitor is a covalent BTK inhibitor.
26. The method of any preceding claim, wherein the BTK inhibitor is a non-covalent BTK inhibitor.
27. The method of any preceding claim, wherein the BTK inhibitor is a compound selected from Table 1 or a pharmaceutically acceptable salt thereof.