

CLAIMS

1. A drug combination for treating a neoplasm in a subject, comprising:
poziotinib or a pharmaceutically acceptable salt thereof; and
a vascular endothelial growth factor receptor 2 (VEGFR2) inhibitor.
2. The drug combination of claim 1, wherein the VEGFR2 inhibitor is Ramucirumab.
3. The drug combination of claim 1, wherein the poziotinib is in a monohydrochloride salt form.
4. A kit for treating a neoplasm in a subject, comprising:
poziotinib or a pharmaceutically acceptable salt thereof; and
a vascular endothelial growth factor receptor 2 (VEGFR2) inhibitor.
5. The kit of claim 4, wherein the VEGFR2 inhibitor is Ramucirumab.
6. The kit of claim 4, further comprising an educational information and direction of use.
7. A method for treating a neoplasm in a subject, comprising administering a drug combination according to any one of claim 1 to claim 3 to the subject.
8. The method of claim 7, wherein the neoplasm is selected from the group consisting of non-small cell lung cancer, breast cancer, stomach cancer, colon cancer, pancreatic cancer, prostate cancer, myeloma, head and neck cancer, ovarian cancer, esophageal cancer, and metastatic cell carcinoma.
9. The method of claim 7, wherein the VEGFR2 inhibitor in the drug combination is Ramucirumab.
10. The method of claim 7, wherein the subject expresses a mutation at exon 18, exon 19, exon 20, or exon 21.
11. The method of claim 7, further comprising determining the subject as having one or more HER2 exon 20 mutations.

12. The method of claim 7, further comprising determining the subject as having one or more EGFR exon 20 mutations selected from the group consisting of A775insV G776C, A775insYVMA, G776C V777insC, G776del insVV, G776del insVC, P780insGSP, Y772dupYVMA, V773M, G776delinsLC, V777L, V777insCG, G778dupGSP, P780insGSP, L786V.
13. The method of claim 7, further comprising determining the subject as having one or more EGFR exon 20 mutations selected from the group consisting of A763insFQEA, A767insASV, S768dupSVD, V769insASV, D770insSVD, D770insNPG, H773insNPH, N771del insGY, N771del insFH, N771dupNPH, A767insTLA, S768I, V769L, V769insGSV, D770del insGY, D770insG, D770insY H773Y, N771insHH, P772insDNP, H773insAH, H773insH, V774insHV, S784F, R776C, V774M, V769M, G796D, S784F, C775Y, S811F, T790M, V774A, D770A.
14. The method of claim 7, further comprising determining the subject as having one or more HER2 exon 21 mutations selected from the group consisting of a point mutation, insertion, and deletion of 1-18 nucleotides between amino acids 832-883.
15. The method of claim 7, further comprising determining the subject as having one or more HER2 exon 21 mutations are at one or more residues selected from the group consisting of V842, R868, and L869.
16. The method of claim 7, wherein the neoplasm is non-small cell lung carcinoma.
17. The method of claim 7, wherein the neoplasm is a metastatic cancer.
18. The method of claim 7, wherein the cancer is refractory to chemotherapy or radiotherapy, resistant to chemotherapy, or has relapsed.
19. The method of claim 7, wherein the subject has previously received one, two, three or more lines of therap for the neoplasm.
20. The method of claim 7, wherein the subject has not previously received treatment with a EGFR tyrosine kinase inhibitor.
21. The method of claim 7, wherein the subject has received prior treatment with an EGFR tyrosine kinase inhibitor.

22. The method of claim 7, wherein the administration and / or dosage of the drug combination is controlled to treat or prevent CNS metastases in the subject.
23. A method of treating or preventing CNS metastases in a subject, wherein the subject has been diagnosed to have a cancer comprising administering a drug combination according to any one of claim 1 to claim 3 to the subject.
24. The method of claim 23, wherein the cancer is non-small cell lung cancer (NSCLC).
25. The method of claim 23, wherein the subject has been determined to have CNS metastases.
26. The method of claim 23, wherein the subject has been determined to have no CNS metastases.
27. The method of claim 23, wherein the subject has previously received one, two, three or more lines of therap for the neoplasm.
28. The method of claim 23, wherein the subject has not previously received treatment with a EGFR tyrosine kinase inhibitor.