methylpyrrolidin-2-yl]-1H-benzimidazole-4-carboxamide) is a potent, orally bioavailable PARP inhibitor that enhances the efficacy of platinum-containing DNA damaging therapies in some pre-clinical models, and veliparib has been safely combined with full dose carboplatin and paclitaxel in human clinical trials. The present invention describes the use of veliparib in combination with carboplatin and paclitaxel in the treatment of smokers with non-small cell lung cancer.

BRIEF SUMMARY OF THE INVENTION

The present invention pertains to a method for the treatment of non-small cell lung cancer in a subject who is a smoker, comprising administering to the subject an effective amount of a PARP inhibitor in combination with carboplatin and paclitaxel. In one embodiment, the present invention pertains to a method for the treatment of non-small cell lung cancer in a subject who is a smoker, comprising administering to the subject an effective amount of 2-[(2R)-2-methylpyrrolidin-2-yl]-1H-benzimidazole-4-carboxamide, or a pharmaceutically acceptable salt thereof, in combination with carboplatin and paclitaxel.

In one aspect, there is provided use of an effective amount of a PARP inhibitor in combination with carboplatin and paclitaxel, in the manufacture of a medicament for the treatment of non-small cell lung cancer in a subject who is a smoker.

In one aspect, there is provided use of an effective amount of a PARP inhibitor in combination with carboplatin and paclitaxel, in the manufacture of a medicament for the treatment of non-small cell lung cancer in a subject with a DNA damage profile similar to that of a subject who is a smoker.

In one aspect, there is provided a composition comprising 2-[(2R)-2-methylpyrrolidin-2-yl]-1H-benzimidazole-4-carboxamide, or a pharmaceutically acceptable salt thereof, for use in a method for the treatment of non-small cell lung cancer in a subject who is a smoker, or with a DNA damage profile similar to that of a subject who is a smoker.

BRIEF DESCRIPTION OF THE DRAWINGS

FIGURE 1 shows progression-free survival (PFS) in current smokers, placebo vs. veliparib, in human subjects.

FIGURE 2 shows overall survival (OS) in current smokers, placebo vs. veliparib, in human subjects.

FIGURE 3 shows progression-free survival (PFS) in cotinine high patients, placebo vs. veliparib, in human subjects.

FIGURE 4 shows overall survival (OS) in cotinine high patients, placebo vs. veliparib, in human subjects.

FIGURE 5 shows progression-free survival (PFS) in heavy smokers, placebo vs. veliparib, in human subjects.

FIGURE 6 shows overall survival (OS) in heavy smokers, placebo vs. veliparib, in human subjects.

FIGURE 7 shows dose normalized veliparib concentration-time profile.

DETAILED DESCRIPTION OF THE INVENTION

Definitions

The terms "treat", "treating" and "treatment" refer to a method of alleviating or abrogating a disease and/or its attendant symptoms.

WE CLAIM:

1. Use of an effective amount of a PARP inhibitor in combination with carboplatin and paclitaxel, in the manufacture of a medicament for the treatment of non-small cell lung cancer in a subject who is a smoker.

2. The use of claim 1, wherein the smoker is a current smoker.

3. The use of claim 1, wherein the smoker is a heavy smoker.

4. The use of claim 1, wherein the smoker is a cotinine high patient.

5. The use of claim 1, wherein the PARP inhibitor is 2-[(2R)-2-methylpyrrolidin-2-yl]-1H-benzimidazole-4-carboxamide, or a pharmaceutically acceptable salt thereof.

6. The use of claim 1, wherein the non-small cell lung cancer is squamous.

7. The use of claim 1, wherein the non-small cell lung cancer is non-squamous.

8. Use of an effective amount of a PARP inhibitor in combination with carboplatin and paclitaxel, in the manufacture of a medicament for the treatment of non-small cell lung cancer in a subject with a DNA damage profile similar to that of a subject who is a smoker.

9. The use of claim 8, wherein the smoker is a current smoker.

10. The use of claim 8, wherein the smoker is a heavy smoker.

11. The use of claim 8, wherein the smoker is a cotinine high patient.

12. The use of claim 8, wherein the PARP inhibitor is 2-[(2R)-2-methylpyrrolidin-2-yl]-1H-benzimidazole-4-carboxamide, or a pharmaceutically acceptable salt thereof.

13. The use of claim 8, wherein the non-small cell lung cancer is squamous.

14. The use of claim 8, wherein the non-small cell lung cancer is non-squamous.

15. A composition comprising 2-[(2R)-2-methylpyrrolidin-2-yl]-1H-benzimidazole-4-carboxamide, or a pharmaceutically acceptable salt thereof, for use in a method for the treatment of non-small cell lung cancer in a subject who is a smoker, or with a DNA damage profile similar to that of a subject who is a smoker.