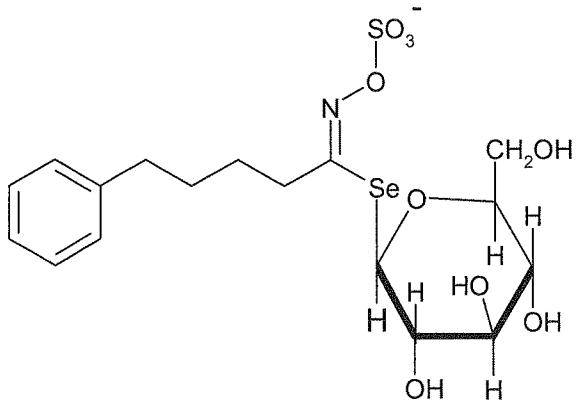
[0041] Commercial packages according to aspects of the present disclosure include cetuximab and the ISC-4 glucosinolate prodrug or a pharmaceutically acceptable salt thereof, wherein the cetuximab is provided as a first pharmaceutical formulation and the ISC-4 glucosinolate prodrug or pharmaceutically acceptable salt thereof is provided as a separate second pharmaceutical formulation in the commercial package.

[0042] Compositions according to aspects of the present disclosure include the ISC-4 glucosinolate prodrug having the structural formula:



or a pharmaceutically acceptable salt thereof.

[0042a] In one aspect, there is provided the use of cetuximab and ISC-4 in the manufacture of a medicament for treating cancer in a subject in need thereof, wherein the cetuximab and ISC-4 are formulated as a combination or separately.

[0042b] In one aspect, there is provided the use of cetuximab and an ISC-4 prodrug in the manufacture of a medicament for treating cancer in a subject in need thereof, wherein the cetuximab and ISC-4 prodrug are formulated as a combination or separately.

[0042c] In one aspect, there is provided a pharmaceutical composition comprising: cetuximab and ISC-4; or cetuximab and an ISC-4 prodrug.

[0042d] In one aspect, there is provided a commercial package comprising cetuximab and ISC-4; or cetuximab and an ISC-4 prodrug.

[0042e] In one aspect, there is provided a commercial package comprising cetuximab and ISC-4; or cetuximab and an ISC-4 prodrug for use in treating cancer.

[0042f] In one aspect, there is provided cetuximab and ISC-4 or cetuximab and an ISC-4 prodrug for use in the treatment of cancer.

[0042g] In one aspect, there is provided a combination of cetuximab and ISC-4 or cetuximab and an ISC-4 prodrug for use as a medicament.

[0042h] In one aspect, there is provided a commercial package comprising cetuximab and ISC-4 as a single pharmaceutical formulation; or cetuximab and an ISC-4 prodrug as a single pharmaceutical formulation.

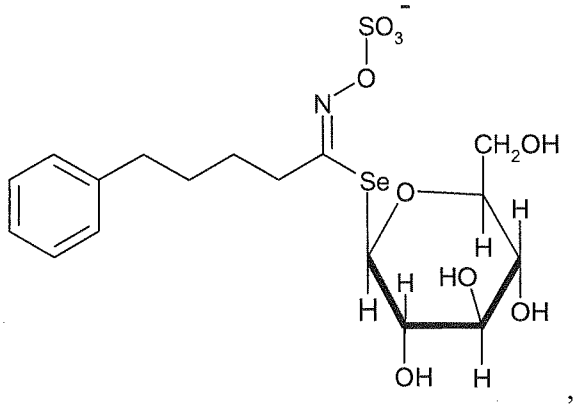
[0043] Methods of assessing efficacy of treatment of cancer are provided according to aspects of the present disclosure which include: obtaining a first sample containing or suspected of containing cancer cells from a subject prior to administering cetuximab and ISC-4 together or separately; obtaining a second sample containing or suspected of containing cancer cells from the subject after administering the cetuximab and ISC-4; and assaying the first and second samples for one or more markers of apoptosis and/or assaying the first and second samples for phospho-Akt, wherein an increase in the one or more markers of apoptosis and a decrease in phosphor-Akt is indicative of therapeutic activity of administering both cetuximab and ISC-4 in combination, together or separately, thereby monitoring effectiveness of administering the combination of cetuximab and ISC-4.

[0044] Methods of assessing efficacy of treatment of cancer are provided according to aspects of the present disclosure which include: obtaining a first sample containing or suspected of containing cancer cells from a subject prior to administering cetuximab and an ISC-4 together or separately; obtaining a second sample containing or suspected of containing cancer cells from the subject after administering the cetuximab and the ISC-4 prodrug; and assaying the first and second samples for one or more markers of apoptosis and/or assaying the first and second samples for phospho-Akt, wherein an increase in the one or more markers of apoptosis and a

CLAIMS

1. A pharmaceutical composition comprising: cetuximab and ISC-4; or cetuximab and an ISC-4 prodrug.

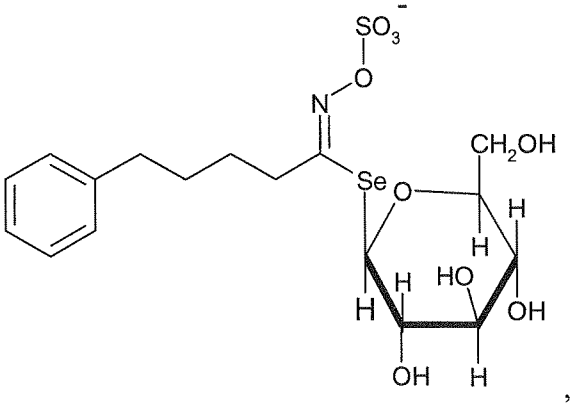
2. The pharmaceutical composition of claim 1, wherein the ISC-4 prodrug is ISC-4 glucosinolate prodrug having the structural formula:



or a pharmaceutically acceptable salt thereof.

3. A commercial package comprising cetuximab and ISC-4; or cetuximab and an ISC-4 prodrug for use in treating cancer.

4. The commercial package of claim 3 wherein the ISC-4 prodrug is ISC-4 glucosinolate prodrug having the structural formula:



or a pharmaceutically acceptable salt thereof.

5. The commercial package of claim 3, wherein the cetuximab and ISC-4 are provided as a single pharmaceutical formulation.

6. The commercial package of claim 3, wherein the cetuximab and ISC-4 are provided as separate pharmaceutical formulations.

7. The commercial package of claim 3 or 4, wherein the cetuximab; and the ISC-4 prodrug are provided as a single pharmaceutical formulation.

8. The commercial package of claim 3 or 4, wherein the cetuximab; and the ISC-4 prodrug are provided as separate pharmaceutical formulations.

9. Use of cetuximab and ISC-4 in the manufacture of a medicament for treating cancer in a subject in need thereof, wherein the cetuximab and ISC-4 are formulated as a combination or separately.

10. The use of claim 9, wherein the medicament provides a synergistic effect.

11. The use of claim 9 or 10, wherein the cancer is characterized by wild-type KRAS.

12. The use of any of claims 9-11, wherein the cancer is colorectal cancer characterized by wild-type KRAS.

13. The use of any of claims 9-12, wherein the cetuximab and ISC-4 are to be administered simultaneously.

14. The use of any of claims 9-12, wherein the cetuximab and ISC-4 are to be administered sequentially.

15. The use of any of claims 9-12 and 14, wherein the cetuximab and ISC-4 are to be administered sequentially within a period of time selected from: one hour, two hours, four hours, eight hours, twelve hours and twenty-four hours.

16. Use of cetuximab and an ISC-4 prodrug in the manufacture of a medicament for treating cancer in a subject in need thereof, wherein the cetuximab and ISC-4 prodrug are formulated as a combination or separately.

17. The use of claim 16, wherein the medicament provides a synergistic effect.

18. The use of claim 16 or 17, wherein the cancer is characterized by wild-type KRAS.

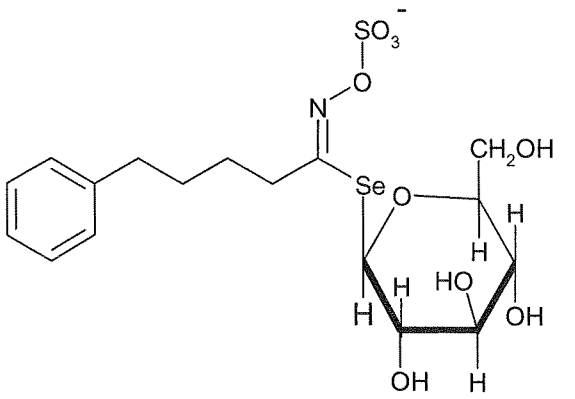
19. The use of any of claims 16-18, wherein the cancer is colorectal cancer characterized by wild-type KRAS.

20. The use of any of claims 16-19, wherein the cetuximab and ISC-4 prodrug are to be administered simultaneously.

21. The use of any of claims 16-19, wherein the cetuximab and ISC-4 prodrug are to be administered sequentially.

22. The use of any of claims 16-19 and 21, wherein the cetuximab and ISC-4 prodrug are to be administered sequentially within a period of time selected from: one hour, two hours, four hours, eight hours, twelve hours and twenty-four hours.

23. The use of any of claims 16-22, wherein the ISC-4 prodrug is ISC-4 glucosinolate prodrug having the structural formula:



,

or a pharmaceutically acceptable salt thereof.

24. The use of any of claims 9-23, wherein the cancer is resistant to 5-fluorouracil.

25. The use of any of claims 9-23, wherein the cancer is resistant to 5-fluorouracil and characterized by wild-type KRAS.

26. The use of any of claims 9-23, wherein the cancer is resistant to 5-fluorouracil and characterized by wild-type KRAS such that the wild-type KRAS does not have an activating KRAS mutation, in codon 12, 13 or 61, with reference to human KRAS.

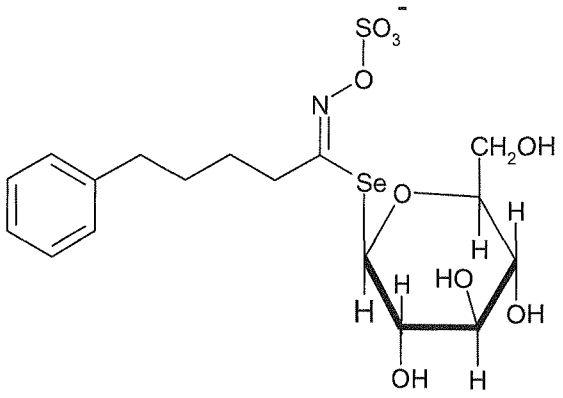
27. The use of any of claims 9-26, wherein the cancer is resistant to 5-fluorouracil and characterized by wild-type KRAS such that the wild-type KRAS does not have activating KRAS mutations Q61H, G12S, G12V, G12A or G13D, with reference to human KRAS.

28. Cetuximab and ISC-4 or cetuximab and an ISC-4 prodrug for use in the treatment of cancer.

29. A combination of cetuximab and ISC-4 or cetuximab and an ISC-4 prodrug for use as a medicament.

30. A commercial package comprising cetuximab and ISC-4 as a single pharmaceutical formulation; or cetuximab and an ISC-4 prodrug as a single pharmaceutical formulation.

31. The commercial package of claim 30 wherein the ISC-4 prodrug is ISC-4 glucosinolate prodrug having the structural formula:



,

or a pharmaceutically acceptable salt thereof.