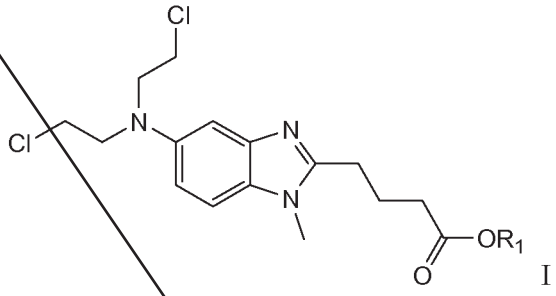
What is Claimed:

1. A compound of formula I:



I

wherein R_1 is C_6-C_{24}alkyl or polyethylene glycol.

2. The compound of claim 1, wherein R_1 is C_8-C_{24}alkyl.

3. The compound of claim 1, wherein R_1 is C_{10}-C_{24}alkyl.

4. The compound of claim 1, wherein R_1 is C_{12}-C_{24}alkyl.

5. The compound of claim 1, wherein R_1 is C_{14}-C_{24}alkyl.

6. The compound of claim 1, wherein R_1 is C_{16}-C_{24}alkyl.

7. The compound of claim 1, wherein R_1 is C_{18}-C_{24}alkyl.

8. The compound of claim 1, wherein R_1 is C_{10}alkyl.

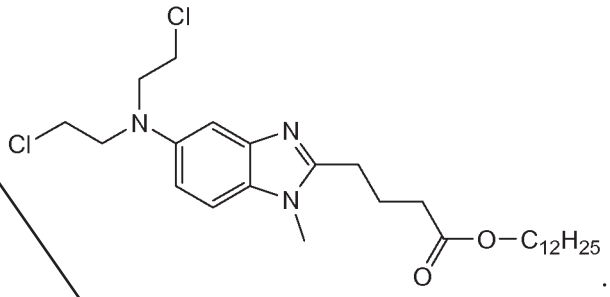
9. The compound of claim 1, wherein R_1 is C_{12}alkyl.

10. The compound of claim 1, wherein R_1 is C_{14}alkyl.

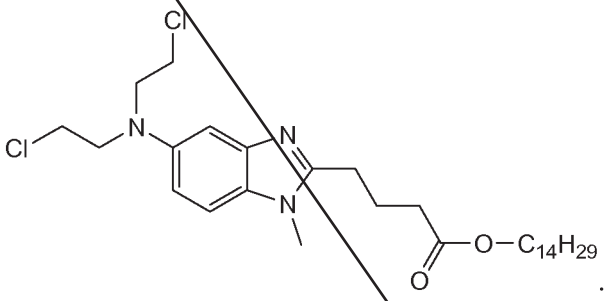
11. The compound of claim 1, wherein R_1 is C_{16}alkyl.

12. The compound of claim 1, wherein R_1 is C_6alkyl.

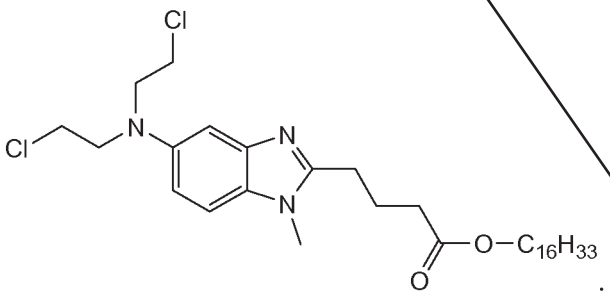
13. The compound of claim 1, wherein the compound of formula I is



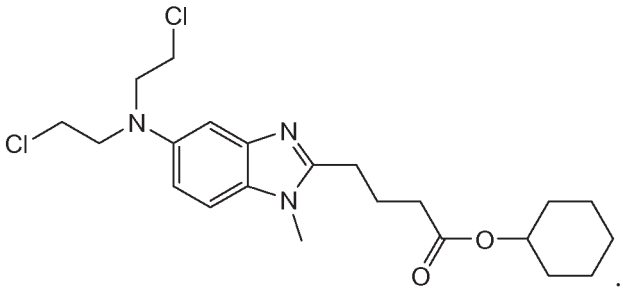
14. The compound of claim 1, wherein the compound of formula I is



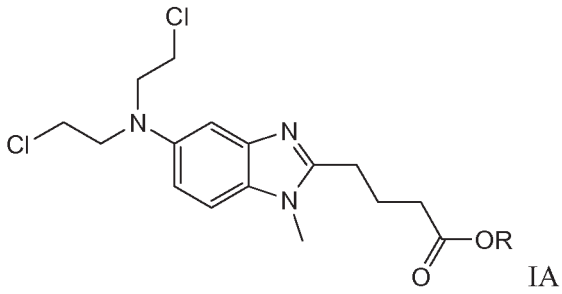
15. The compound of claim 1, wherein the compound of formula I is



16. The compound of claim 1, wherein the compound of formula I is



17. A pharmaceutical composition comprising a compound according to formula IA:



IA

wherein R is C_1-C_{24}alkyl or polyethylene glycol; and

a pharmaceutically acceptable carrier or diluent.

18. The pharmaceutical composition of claim 17, wherein R is C_{10}-C_{24}alkyl

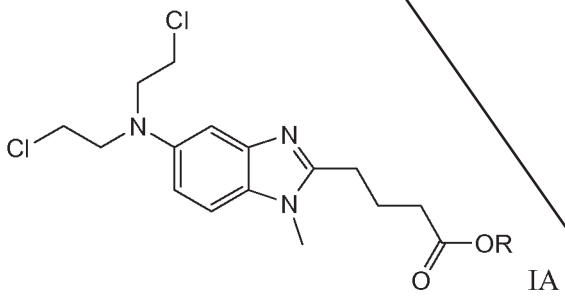
19. The pharmaceutical composition of claim 17, wherein R is C_{10}alkyl.

20. The pharmaceutical composition of claim 17, wherein R is C_{12}alkyl.

21. The pharmaceutical composition of claim 17, wherein R is C_{14}alkyl.

22. The pharmaceutical composition of claim 17, wherein R is C_{16}alkyl.

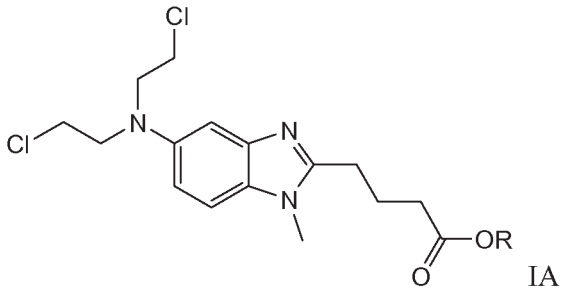
23. Nanoparticles comprising a compound according to formula IA:



IA

wherein R is C_1-C_{24}alkyl or polyethylene glycol.

24. A method of treating cancer in a patient comprising administering to the patient a compound according to formula IA:



IA

wherein R is C_1-C_{24}alkyl or polyethylene glycol.

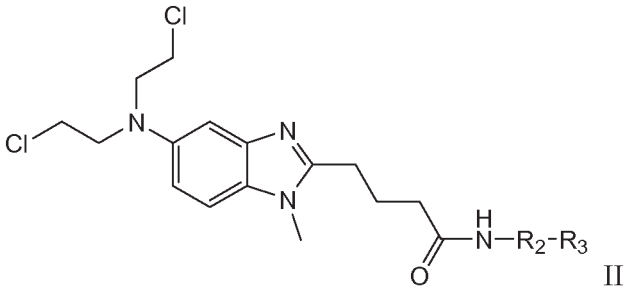
25. The method of claim 24, wherein the cancer is chronic lymphocytic leukemia, Hodgkin's disease, indolent non-Hodgkin's lymphoma, aggressive non-Hodgkin's lymphoma, multiple myeloma, acute lymphocytic leukemia, breast cancer or lung cancer.

26. The method of claim 24, wherein the cancer is selected from sarcoma, bladder cancer, cervical cancer, testicular cancer, melanoma, glioblastoma, colon cancer, head and neck cancer, ovarian cancer, and prostate cancer.

27. The method of any one of claims 24 to 26, wherein the patient is resistant to one or more chemotherapeutic agents.

28. The method of claim 27, wherein the one or more chemotherapeutic agents is an alkylating agent.

29. A compound of formula II:



II

wherein R_2 is C_1-C_{24}alkylene; and R_3 is–$COOC_{1-3}$alkyl; or R_2-R_3 is C_1-C_{24}alkyl; or a pharmaceutically acceptable salt form thereof.

30. The compound of claim 29, wherein R_2-R_3 is C_8-C_{24}alkyl.

31. The compound of claim 29, wherein R_2-R_3 is C_{10}-C_{24}alkyl.

32. The compound of claim 29, wherein R_2-R_3 is C_{12}-C_{24}alkyl.

33. The compound of claim 29, wherein R_2-R_3 is C_{14}-C_{24}alkyl.

34. The compound of claim 29, wherein R_2-R_3 is C_{16}-C_{24}alkyl.

35. The compound of claim 29, wherein R_2-R_3 is C_{18}-C_{24}alkyl.

36. The compound of claim 29, wherein R_2-R_3 is C_{10}alkyl.

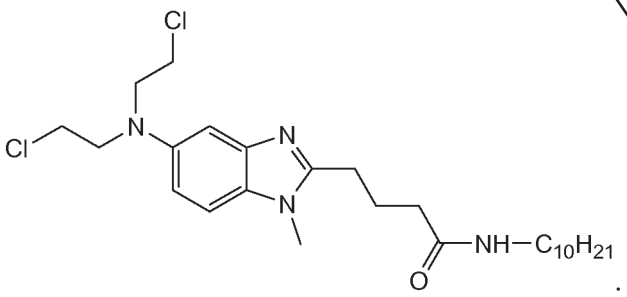
37. The compound of claim 29, wherein R_2-R_3 is C_{12}alkyl.

38. The compound of claim 29, wherein R_2-R_3 is C_{14}alkyl.

39. The compound of claim 29, wherein R_2-R_3 is C_{16}alkyl.

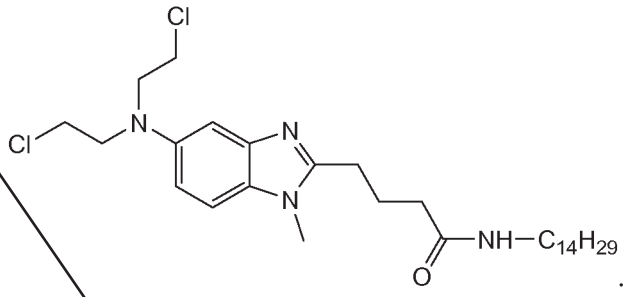
40. The compound of claim 29, wherein R_2 is C_2alkyene and R_3 is $-COOCH_3$.

41. The compound of claim 29, wherein the compound of formula II is

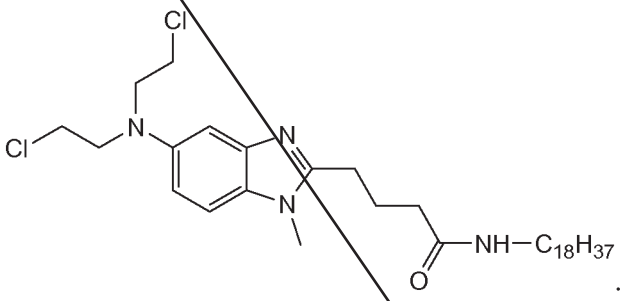


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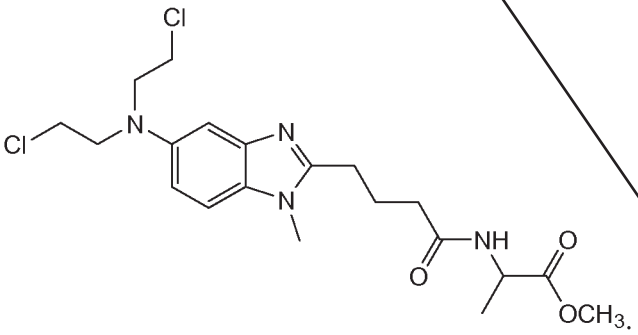
42. The compound of claim 29, wherein the compound of formula II is



43. The compound of claim 29, wherein the compound of formula II is



44. The compound of claim 29, wherein the compound of formula II is



45. A pharmaceutical composition comprising a compound according to claim 29 and a pharmaceutically acceptable carrier or diluent.

46. Nanoparticles comprising a compound according to claim 29.

47. A method of treating cancer in a patient comprising administering to the patient a compound according to claim 29.

48. The method of claim 47, wherein the cancer is chronic lymphocytic leukemia, Hodgkin's disease, indolent non-Hodgkin's lymphoma, aggressive non-Hodgkin's lymphoma, multiple myeloma, acute lymphocytic leukemia, breast cancer or lung cancer.

49. The method of claim 47, wherein the cancer is selected from sarcoma, bladder cancer, cervical cancer, testicular cancer, melanoma, glioblastoma, colon cancer, head and neck cancer, ovarian cancer, and prostate cancer.

50. The method of any one of claims 47 to 49, wherein the patient is resistant to one or more chemotherapeutic agents.

51. The method of claim 50, wherein the one or more chemotherapeutic agents is an alkylating agent.

52. Nanoparticles comprising a compound according to any one of claims 1 to 16.

53. The nanoparticles of claim 52, further comprising human serum albumin.

54. The nanoparticles of claim 52 or 53, further comprising poly-lactic glycolic acid.

55. The nanoparticles of claim 52 or 53, further comprising a polyethylene glycol.

56. The nanoparticles of claim 52 or 53, further comprising a poly-lactic glycolic Acid (PLGA) and polyoxyethylene lactic acid copolymer.

57. The nanoparticles of claim 53, wherein the human serum albumin is cross-linked with a dialdehyde.

58. The nanoparticles of claim 57, wherein the dialdehyde is glutaraldehyde.

59. A lyophilized composition comprising nanoparticles according to any one of claims 52 to 58.

60. The lyophilized composition of claim 59, further comprising one or more of mannitol, trehalose, sucrose, or NaCl.

61. A method of treating cancer in a patient comprising administering to the patient the nanoparticles according to any one of claims 52 to 58.

62. The method of claim 61, wherein the cancer is chronic lymphocytic leukemia, Hodgkin's disease, indolent non-Hodgkin's lymphoma, aggressive non-Hodgkin's lymphoma, multiple myeloma, acute lymphocytic leukemia, breast cancer or lung cancer.

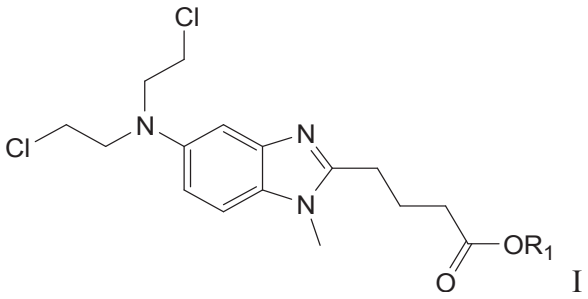
63. The method of claim 61, wherein the cancer is selected from sarcoma, bladder cancer, cervical cancer, testicular cancer, melanoma, glioblastoma, colon cancer, head and neck cancer, ovarian cancer, and prostate cancer.

64. The method of any one of claims 61 to 63, wherein the patient is resistant to one or more chemotherapeutic agents.

65. The method of claim 64, wherein the one or more chemotherapeutic agents is an alkylating agent.

What is Claimed:

1. A compound of formula I:



I

wherein R_1 is C_6-C_{24}alkyl or polyethylene glycol.

2. The compound of claim 1, wherein R_1 is C_8-C_{24}alkyl.

3. The compound of claim 1, wherein R_1 is C_{10}-C_{24}alkyl.

4. The compound of claim 1, wherein R_1 is C_{12}-C_{24}alkyl.

5. The compound of claim 1, wherein R_1 is C_{14}-C_{24}alkyl.

6. The compound of claim 1, wherein R_1 is C_{16}-C_{24}alkyl.

7. The compound of claim 1, wherein R_1 is C_{18}-C_{24}alkyl.

8. The compound of claim 1, wherein R_1 is C_{10}alkyl.

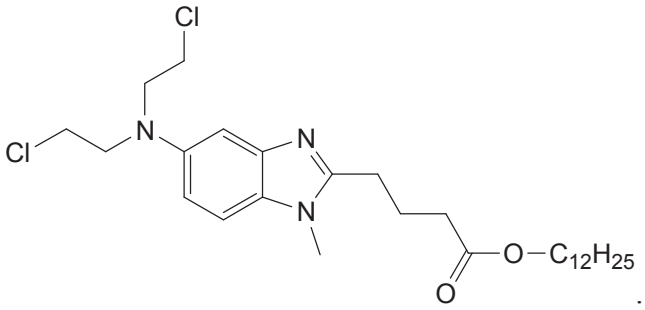
9. The compound of claim 1, wherein R_1 is C_{12}alkyl.

10. The compound of claim 1, wherein R_1 is C_{14}alkyl.

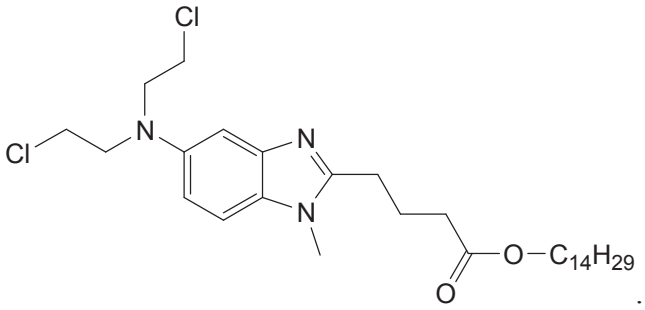
11. The compound of claim 1, wherein R_1 is C_{16}alkyl.

12. The compound of claim 1, wherein R_1 is C_6alkyl.

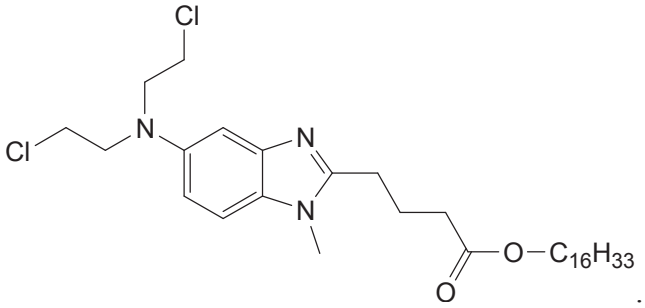
13. The compound of claim 1, wherein the compound of formula I is



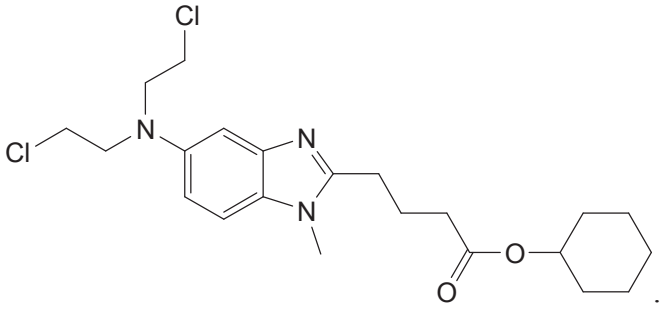
14. The compound of claim 1, wherein the compound of formula I is



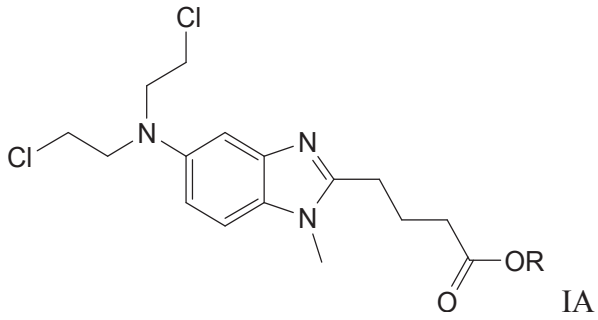
15. The compound of claim 1, wherein the compound of formula I is



16. The compound of claim 1, wherein the compound of formula I is



17. A pharmaceutical composition comprising a compound according to formula IA:



IA

wherein R is C_1-C_{24}alkyl or polyethylene glycol; and

a pharmaceutically acceptable carrier or diluent.

18. The pharmaceutical composition of claim 17, wherein R is C_{10}-C_{24}alkyl.

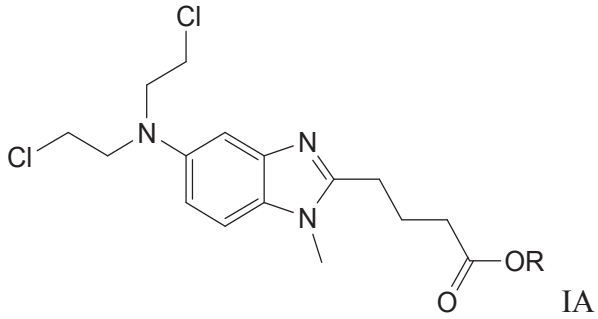
19. The pharmaceutical composition of claim 17, wherein R is C_{10}alkyl.

20. The pharmaceutical composition of claim 17, wherein R is C_{12}alkyl.

21. The pharmaceutical composition of claim 17, wherein R is C_{14}alkyl.

22. The pharmaceutical composition of claim 17, wherein R is C_{16}alkyl.

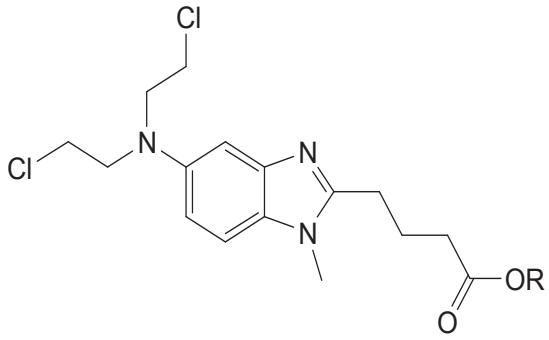
23. Nanoparticles comprising a compound according to formula IA:



IA

wherein R is C_1-C_{24}alkyl or polyethylene glycol.

24. Use of a compound according to formula IA:



IA

wherein R is C_1-C_{24}alkyl or polyethylene glycol in the preparation of a medicament for treating cancer.

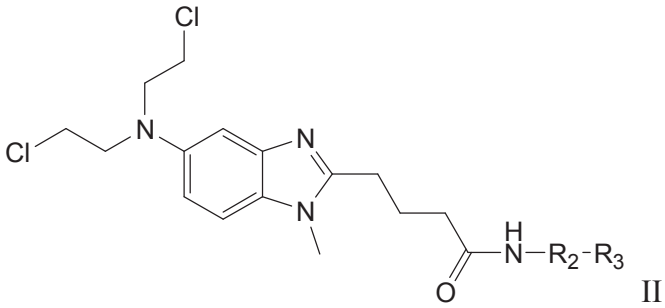
25. The use of claim 24, wherein the cancer is chronic lymphocytic leukemia, Hodgkin's disease, indolent non-Hodgkin's lymphoma, aggressive non-Hodgkin's lymphoma, multiple myeloma, acute lymphocytic leukemia, breast cancer or lung cancer.

26. The use of claim 24, wherein the cancer is selected from sarcoma, bladder cancer, cervical cancer, testicular cancer, melanoma, glioblastoma, colon cancer, head and neck cancer, ovarian cancer, and prostate cancer.

27. The use of any one of claims 24 to 26, wherein the patient is resistant to one or more chemotherapeutic agents.

28. The use of claim 27, wherein the one or more chemotherapeutic agents is an alkylating agent.

29. A compound of formula II:



II

wherein R_2 is C_1-C_{24}alkylene; and R_3 is–$COOC_{1\text{-}3}$alkyl; or R_2-R_3 is C_1-C_{24}alkyl; or a pharmaceutically acceptable salt form thereof.

30. The compound of claim 29, wherein R_2-R_3 is C_8-C_{24}alkyl.

31. The compound of claim 29, wherein R_2-R_3 is C_{10}-C_{24}alkyl.

32. The compound of claim 29, wherein R_2-R_3 is C_{12}-C_{24}alkyl.

33. The compound of claim 29, wherein R_2-R_3 is C_{14}-C_{24}alkyl.

34. The compound of claim 29, wherein R_2-R_3 is C_{16}-C_{24}alkyl.

35. The compound of claim 29, wherein R_2-R_3 is C_{18}-C_{24}alkyl.

36. The compound of claim 29, wherein R_2-R_3 is C_{10}alkyl.

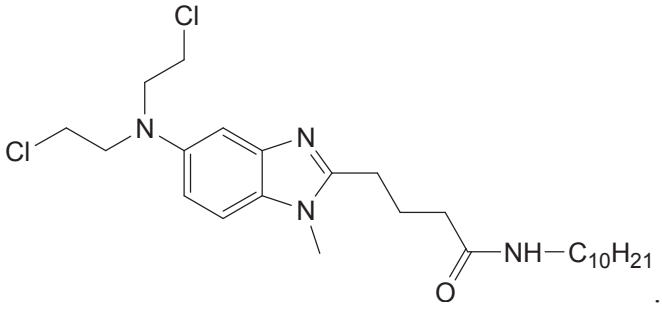
37. The compound of claim 29, wherein R_2-R_3 is C_{12}alkyl.

38. The compound of claim 29, wherein R_2-R_3 is C_{14}alkyl.

39. The compound of claim 29, wherein R_2-R_3 is C_{16}alkyl.

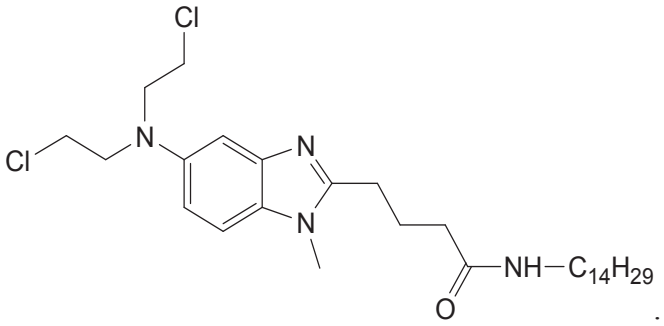
40. The compound of claim 29, wherein R_2 is C_2alkyene and R_3 is $–COOCH_3$.

41. The compound of claim 29, wherein the compound of formula II is

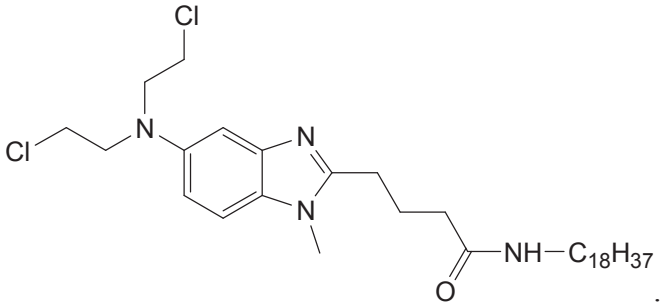


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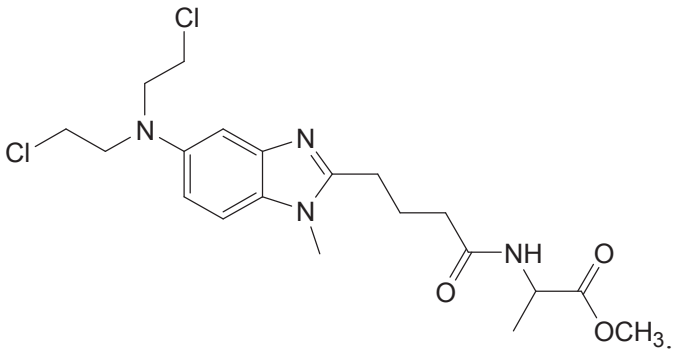
42. The compound of claim 29, wherein the compound of formula II is



43. The compound of claim 29, wherein the compound of formula II is



44. The compound of claim 29, wherein the compound of formula II is



45. A pharmaceutical composition comprising a compound according to claim 29 and a pharmaceutically acceptable carrier or diluent.

46. Nanoparticles comprising a compound according to claim 29.

47. Use of a compound according to claim 29 in the preparation of a medicament for treating cancer.

48. The use of claim 47, wherein the cancer is chronic lymphocytic leukemia, Hodgkin's disease, indolent non-Hodgkin's lymphoma, aggressive non-Hodgkin's lymphoma, multiple myeloma, acute lymphocytic leukemia, breast cancer or lung cancer.

49. The use of claim 47, wherein the cancer is selected from sarcoma, bladder cancer, cervical cancer, testicular cancer, melanoma, glioblastoma, colon cancer, head and neck cancer, ovarian cancer, and prostate cancer.

50. The use of any one of claims 47 to 49, wherein the patient is resistant to one or more chemotherapeutic agents.

51. The use of claim 50, wherein the one or more chemotherapeutic agents is an alkylating agent.

52. Nanoparticles comprising a compound according to any one of claims 1 to 16.

53. The nanoparticles of claim 52, further comprising human serum albumin.

54. The nanoparticles of claim 52 or 53, further comprising poly-lactic glycolic acid.

55. The nanoparticles of claim 52 or 53, further comprising a polyethylene glycol.

56. The nanoparticles of claim 52 or 53, further comprising a poly-lactic glycolic Acid (PLGA) and polyoxyethylene lactic acid copolymer.

57. The nanoparticles of claim 53, wherein the human serum albumin is cross-linked with a dialdehyde.

58. The nanoparticles of claim 57, wherein the dialdehyde is glutaraldehyde.

59. A lyophilized composition comprising nanoparticles according to any one of claims 52 to 58.

60. The lyophilized composition of claim 59, further comprising one or more of mannitol, trehalose, sucrose, or NaCl.

61. Use of the nanoparticles according to any one of claims 52 to 58 in the preparation of a medicament for treating cancer.

62. The use of claim 61, wherein the cancer is chronic lymphocytic leukemia, Hodgkin's disease, indolent non-Hodgkin's lymphoma, aggressive non-Hodgkin's lymphoma, multiple myeloma, acute lymphocytic leukemia, breast cancer or lung cancer.

63. The use of claim 61, wherein the cancer is selected from sarcoma, bladder cancer, cervical cancer, testicular cancer, melanoma, glioblastoma, colon cancer, head and neck cancer, ovarian cancer, and prostate cancer.

64. The use of any one of claims 61 to 63, wherein the patient is resistant to one or more chemotherapeutic agents.

65. The use of claim 64, wherein the one or more chemotherapeutic agents is an alkylating agent.