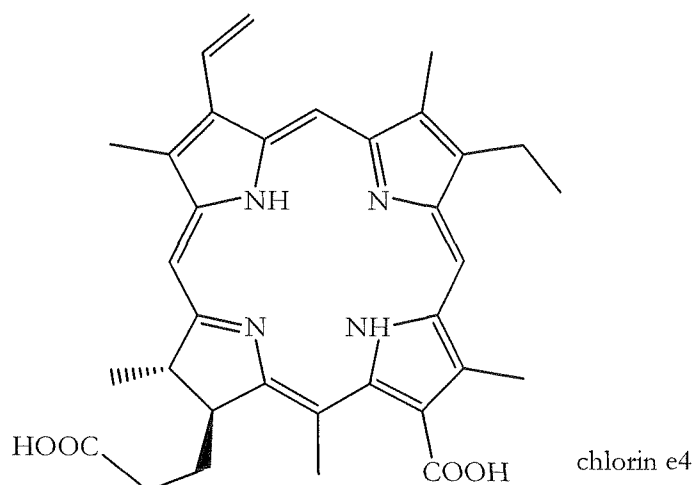
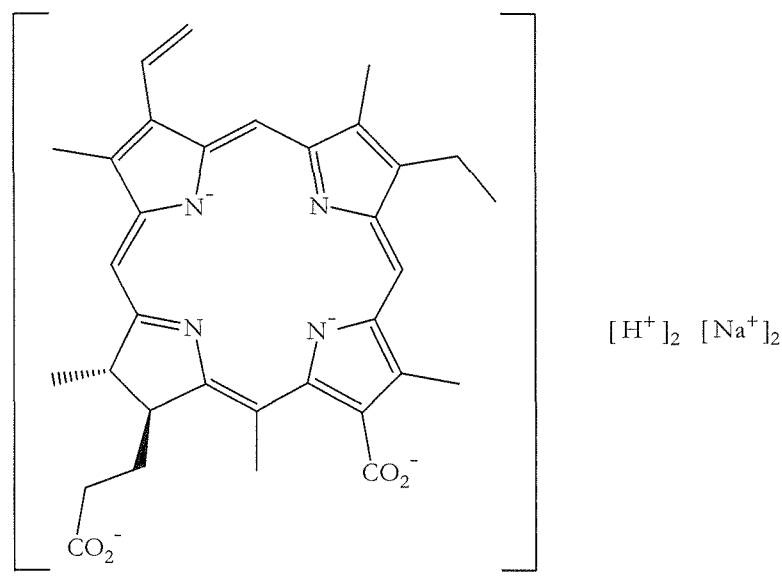




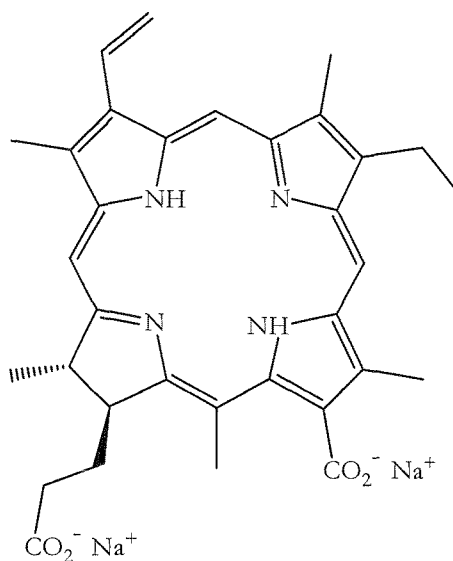
However, there is an ongoing need for better photosensitizers. There is a need for compounds that have a high singlet oxygen quantum yield and for compounds that have a strong photosensitizing ability, preferably in organic and aqueous media. There is also a need for compounds that have a high fluorescence quantum yield.

Summary of the invention

In one aspect, the present invention refers to chlorin e4 sodium, comprising less than 10% of other stereoisomers. In another aspect, the present invention refers to chlorin e4 sodium, comprising chlorin e4 and sodium in a ratio of 1:2 and comprising less than 10% of other stereoisomers. In another aspect, the present invention refers to chlorin e4 sodium, having the structure:



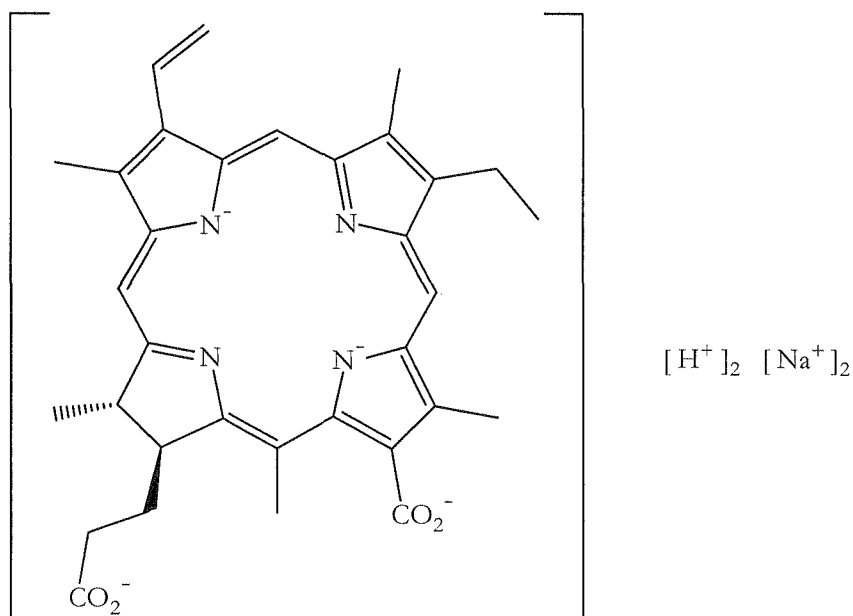
and comprising less than 10% of other stereoisomers. In still another aspect, the present invention refers to chlorin e4 sodium, having the structure:



and comprising less than 10% of other stereoisomers. In another aspect, the present invention refers to a process of preparing chlorin e4 sodium comprising less than 10% of other stereoisomers, comprising the step of reacting chlorin e4 with a sodium compound. In another aspect, the present invention refers to the chlorin e4 sodium of the present invention, for use in the treatment of atherosclerosis; multiple sclerosis; diabetes; diabetic retinopathy; arthritis; rheumatoid arthritis; a fungal, viral, chlamydial, bacterial, nanobacterial or parasitic infectious disease; HIV; Aids; infection with sars virus, Asian (chicken) flu virus, herpes simplex or herpes zoster; hepatitis; viral hepatitis; a cardiovascular disease; coronary artery stenosis; carotid artery stenosis; intermittent claudication; a dermatological condition; acne; psoriasis; a disease characterised by benign or malignant cellular hyperproliferation or by areas of neovascularisation; a benign or malignant tumour; early cancer; cervical dysplasia; soft tissue sarcoma; a germ cell tumour; retinoblastoma; age-related macular degeneration; lymphoma; Hodgkin's lymphoma; head and neck cancer; oral or mouth cancer; or cancer of the blood, prostate, cervix, uterus, vaginal or other female adnexa, breast, naso-pharynx, trachea, larynx, bronchi, bronchioles, lung, hollow organs, esophagus, stomach, bile duct, intestine, colon, colorectum, rectum, bladder, ureter, kidney, liver, gall bladder, spleen, brain, lymphatic system, bones, skin or pancreas. In still another aspect, the present invention refers to a use of chlorin e4 sodium of the present invention in the manufacture of a medicament for the treatment of a benign or malignant tumour;

early cancer; cervical dysplasia; soft tissue sarcoma; a germ cell tumour; retinoblastoma; age-related macular degeneration; lymphoma; Hodgkin's lymphoma; head and neck cancer; oral or mouth cancer; or cancer of the blood, prostate, cervix, uterus, vaginal or other female adnexa, breast, naso-pharynx, trachea, larynx, bronchi, bronchioles, lung, hollow organs, esophagus, stomach, bile duct, intestine, colon, colorectum, rectum, bladder, ureter, kidney, liver, gall bladder, spleen, brain, lymphatic system, bones, skin or pancreas.

Further described herein, in a first example provides there is provided chlorin e4 sodium. Preferably the chlorin e4 sodium comprises chlorin e4 and sodium in a ratio of 1:2. Preferably the chlorin e4 sodium has the structure:



malignant cellular hyperproliferation or by areas of neovascularisation; a benign or malignant tumour; early cancer; cervical dysplasia; soft tissue sarcoma; a germ cell tumour; retinoblastoma; age-related macular degeneration; Hodgkin's lymphoma; or cancer of the blood, prostate, cervix, uterus, vaginal or other female adnexa, breast, naso-pharynx, trachea, larynx, bronchi, bronchioles, lung, hollow organs, esophagus, stomach, bile duct, intestine, colon, colorectum, rectum, bladder, ureter, kidney, liver, gall bladder, spleen, brain, lymphatic system or bones; the method comprising administering a therapeutically effective amount of chlorin e4 sodium according to the first or third ~~aspect of the present invention~~example to a human or animal in need thereof.

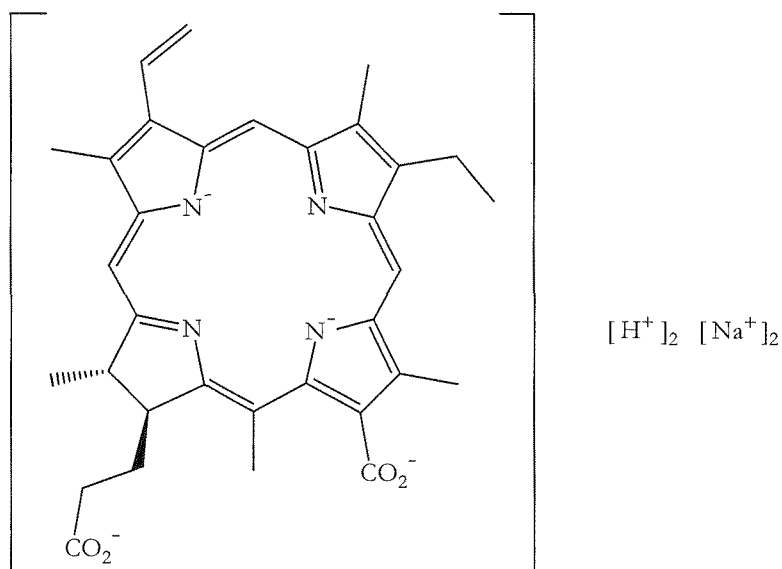
The sixth example also provides a method of photodynamic therapy or cytoluminescent therapy of a human or animal disease, the method comprising administering a therapeutically effective amount of chlorin e4 sodium according to the first or third example to a human or animal in need thereof. Preferably the human or animal disease is atherosclerosis; multiple sclerosis; diabetes; diabetic retinopathy; arthritis; rheumatoid arthritis; a fungal, viral, chlamydial, bacterial, nanobacterial or parasitic infectious disease; HIV; Aids; infection with sars virus, Asian (chicken) flu virus, herpes simplex or herpes zoster; hepatitis; viral hepatitis; a cardiovascular disease; coronary artery stenosis; carotid artery stenosis; intermittent claudication; a dermatological condition; acne; psoriasis; a disease characterised by benign or malignant cellular hyperproliferation or by areas of neovascularisation; a benign or malignant tumour; early cancer; cervical dysplasia; soft tissue sarcoma; a germ cell tumour; retinoblastoma; age-related macular degeneration; Hodgkin's lymphoma; or cancer of the blood, prostate, cervix, uterus, vaginal or other female adnexa, breast, naso-pharynx, trachea, larynx, bronchi, bronchioles, lung, hollow organs, esophagus, stomach, bile duct, intestine, colon, colorectum, rectum, bladder, ureter, kidney, liver, gall bladder, spleen, brain, lymphatic system or bones.

Preferably the method of the sixth example is a method of treating benign or malignant cellular hyperproliferation or areas of neovascularisation.

Claims

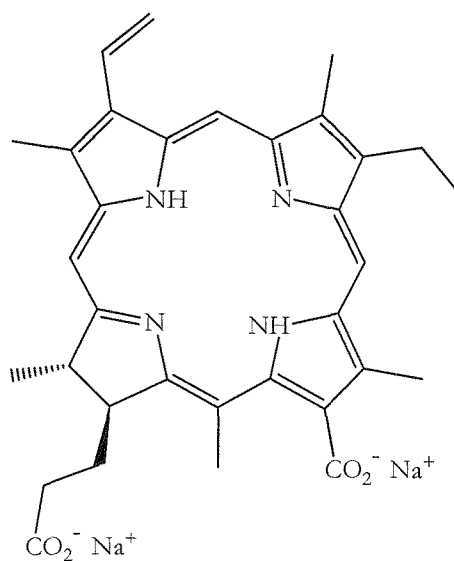
1. Chlorin e4 sodium, comprising less than 10% of other stereoisomers.
- 5 2. Chlorin e4 sodium, comprising chlorin e4 and sodium in a ratio of 1:2 and comprising less than 10% of other stereoisomers.

3. Chlorin e4 sodium, having the structure:



- 10 and comprising less than 10% of other stereoisomers.

4. Chlorin e4 sodium, having the structure:

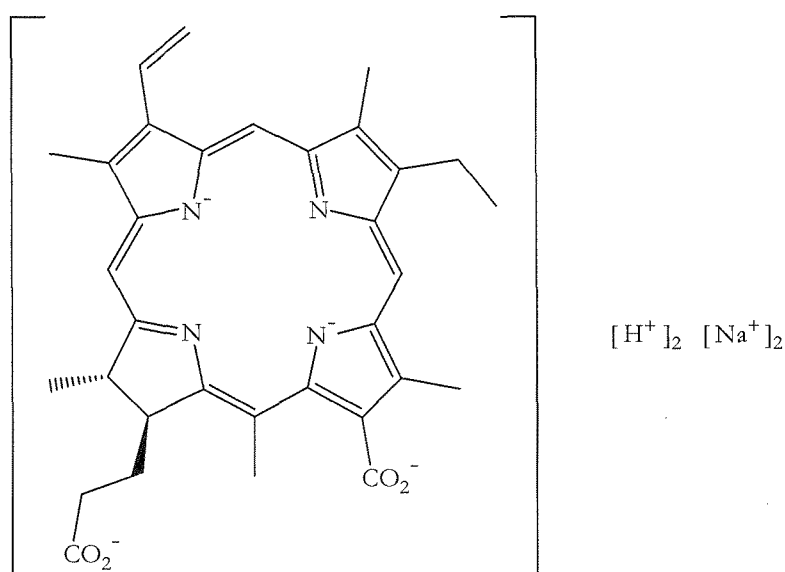


- and comprising less than 10% of other stereoisomers.

5. A process of preparing chlorin e4 sodium comprising less than 10% of other stereoisomers, comprising the step of reacting chlorin e4 with a sodium compound.

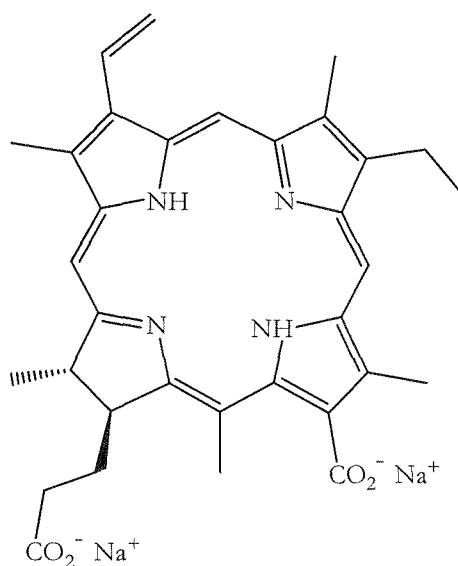
5 6. The process of claim 5, wherein the chlorin e4 sodium obtained comprises chlorin e4 and sodium in a ratio of 1:2.

7. The process of claim 5 or 6, wherein the chlorin e4 sodium obtained has the structure:



10

8. The process of any one of claims 5 to 7, wherein the chlorin e4 sodium obtained has the structure:



9. The process of any one of claims 5 to 8, wherein the sodium compound is sodium hydroxide.
- 5 10. The process of any one of claims 5 to 9, wherein chlorin e4 is reacted with the sodium compound in the presence of a base.
11. The process of claim 10, wherein the base is an amine base.
- 10 12. The process of claim 11, wherein the amine base is thiamine pyrophosphate.
13. The process of any one of claims 5 to 12, wherein chlorin e4, the sodium compound and the optional base are used in a molar ratio of 0.15-1 : 45-60 : 0-12.
- 15 14. Chlorin e4 sodium preparable by a process of any one of claims 5 to 13.
15. Chlorin e4 sodium when prepared by a process of any one of claims 5 to 13.
16. The chlorin e4 sodium of any one of claims 1-4 or 14-15, for use in
20 medicine.
17. The chlorin e4 sodium of any one of claims 1-4 or 14-16, for use in photodynamic therapy or cytoluminescent therapy.
- 25 18. The chlorin e4 sodium of any one of claims 1-4 or 14-17, for use in the treatment of atherosclerosis; multiple sclerosis; diabetes; diabetic retinopathy; arthritis; rheumatoid arthritis; a fungal, viral, chlamydial, bacterial, nanobacterial or parasitic infectious disease; HIV; Aids; infection with sars virus, Asian (chicken) flu virus, herpes simplex or herpes zoster; hepatitis; viral hepatitis; a cardiovascular
30 disease; coronary artery stenosis; carotid artery stenosis; intermittent claudication; a dermatological condition; acne; psoriasis; a disease characterised by benign or malignant cellular hyperproliferation or by areas of neovascularisation; a benign or malignant tumour; early cancer; cervical dysplasia; soft tissue sarcoma; a germ cell

tumour; retinoblastoma; age-related macular degeneration; lymphoma; Hodgkin's lymphoma; head and neck cancer; oral or mouth cancer; or cancer of the blood, prostate, cervix, uterus, vaginal or other female adnexa, breast, naso-pharynx, trachea, larynx, bronchi, bronchioles, lung, hollow organs, esophagus, stomach, bile duct, intestine, colon, colorectum, rectum, bladder, ureter, kidney, liver, gall bladder, spleen, brain, lymphatic system, bones, skin or pancreas.

19. The chlorin e4 sodium of any one of claims 1-4 or 14-18, for use in the treatment of a disease characterised by benign or malignant cellular hyperproliferation or by areas of neovascularisation.

20. The chlorin e4 sodium of any one of claims 1-4 or 14-19, for use in the treatment of a benign or malignant tumour.

21. The chlorin e4 sodium of any one of claims 1-4 or 14-20, for use in the treatment of early cancer; cervical dysplasia; soft tissue sarcoma; a germ cell tumour; retinoblastoma; age-related macular degeneration; lymphoma; Hodgkin's lymphoma; head and neck cancer; oral or mouth cancer; or cancer of the blood, prostate, cervix, uterus, vaginal or other female adnexa, breast, naso-pharynx, trachea, larynx, bronchi, bronchioles, lung, hollow organs, esophagus, stomach, bile duct, intestine, colon, colorectum, rectum, bladder, ureter, kidney, liver, gall bladder, spleen, brain, lymphatic system, bones, skin or pancreas.

22. The chlorin e4 sodium of any one of claims 1-4 or 14-16, for use in photodynamic diagnosis.

23. The chlorin e4 sodium of any one of claims 16 to 22, wherein the chlorin e4 sodium is adapted for administration prior to administration of irradiation.

24. The chlorin e4 sodium of claim 23, wherein the irradiation is electromagnetic radiation with a wavelength in the range of from 500nm to 1000nm.

25. A pharmaceutical composition comprising chlorin e4 sodium of any one of claims 1-4 or 14-24 and a pharmaceutically acceptable carrier or diluent.

26. The pharmaceutical composition of claim 25, for use in photodynamic
5 therapy or cytoluminescent therapy.

27. The pharmaceutical composition of claim 25 or 26, for use in the treatment
of atherosclerosis; multiple sclerosis; diabetes; diabetic retinopathy; arthritis;
rheumatoid arthritis; a fungal, viral, chlamydial, bacterial, nanobacterial or parasitic
10 infectious disease; HIV; Aids; infection with sars virus, Asian (chicken) flu virus,
herpes simplex or herpes zoster; hepatitis; viral hepatitis; a cardiovascular disease;
coronary artery stenosis; carotid artery stenosis; intermittent claudication; a
dermatological condition; acne; psoriasis; a disease characterised by benign or
malignant cellular hyperproliferation or by areas of neovascularisation; a benign or
15 malignant tumour; early cancer; cervical dysplasia; soft tissue sarcoma; a germ cell
tumour; retinoblastoma; age-related macular degeneration; lymphoma; Hodgkin's
lymphoma; head and neck cancer; oral or mouth cancer; or cancer of the blood,
prostate, cervix, uterus, vaginal or other female adnexa, breast, naso-pharynx,
trachea, larynx, bronchi, bronchioles, lung, hollow organs, esophagus, stomach, bile
20 duct, intestine, colon, colorectum, rectum, bladder, ureter, kidney, liver, gall
bladder, spleen, brain, lymphatic system, bones, skin or pancreas.

28. The pharmaceutical composition of any one of claims 25 to 27, for use in the
treatment of a disease characterised by benign or malignant cellular
25 hyperproliferation or by areas of neovascularisation.

29. The pharmaceutical composition of any one of claims 25 to 28, for use in the
treatment of a benign or malignant tumour.

30. The pharmaceutical composition of any one of claims 25 to 29, for use in the
treatment of early cancer; cervical dysplasia; soft tissue sarcoma; a germ cell tumour;
retinoblastoma; age-related macular degeneration; lymphoma; Hodgkin's lymphoma;
head and neck cancer; oral or mouth cancer; or cancer of the blood, prostate,

cervix, uterus, vaginal or other female adnexa, breast, naso-pharynx, trachea, larynx, bronchi, bronchioles, lung, hollow organs, esophagus, stomach, bile duct, intestine, colon, colorectum, rectum, bladder, ureter, kidney, liver, gall bladder, spleen, brain, lymphatic system, bones, skin or pancreas.

5

31. The pharmaceutical composition of claim 25, for use in photodynamic diagnosis.

10

32. The pharmaceutical composition of any one of claims 25 to 31, wherein the pharmaceutical composition is adapted for administration prior to administration of irradiation.

15

33. The pharmaceutical composition claim 32, wherein the irradiation is electromagnetic radiation with a wavelength in the range of from 500nm to 1000nm.

20

34. The pharmaceutical composition of any one of claims 25 to 33, wherein the pharmaceutical composition is in a form suitable for oral, parenteral (including intravenous, subcutaneous, intramuscular, intradermal, intratracheal, intraperitoneal, intraarticular, intraabdominal, intracranial and epidural), transdermal, airway (aerosol), rectal, vaginal or topical (including buccal, mucosal and sublingual) administration.

25

35. The pharmaceutical composition of claim 34, wherein the pharmaceutical composition is in a form suitable for oral or parenteral administration.

30

36. Use of chlorin e4 sodium of any one of claims 1-4 or 14-24 in the manufacture of a medicament for the treatment of a benign or malignant tumour; early cancer; cervical dysplasia; soft tissue sarcoma; a germ cell tumour; retinoblastoma; age-related macular degeneration; lymphoma; Hodgkin's lymphoma; head and neck cancer; oral or mouth cancer; or cancer of the blood, prostate, cervix, uterus, vaginal or other female adnexa, breast, naso-pharynx, trachea, larynx, bronchi, bronchioles, lung, hollow organs, esophagus, stomach, bile duct, intestine,

colon, colorectum, rectum, bladder, ureter, kidney, liver, gall bladder, spleen, brain, lymphatic system, bones, skin or pancreas.

37. Use of chlorin e4 sodium of any one of claims 1-4 or 14-24 in the
5 manufacture of a phototherapeutic agent for use in photodynamic therapy or cytoluminescent therapy.

38. The use of claim 37, wherein the phototherapeutic agent is for the treatment
of a benign or malignant tumour; early cancer; cervical dysplasia; soft tissue
10 sarcoma; a germ cell tumour; retinoblastoma; age-related macular degeneration; lymphoma; Hodgkin's lymphoma; head and neck cancer; oral or mouth cancer; or cancer of the blood, prostate, cervix, uterus, vaginal or other female adnexa, breast, naso-pharynx, trachea, larynx, bronchi, bronchioles, lung, hollow organs, esophagus, stomach, bile duct, intestine, colon, colorectum, rectum, bladder, ureter, kidney,
15 liver, gall bladder, spleen, brain, lymphatic system, bones, skin or pancreas.

39. The use of any one of claims 36 to 38, wherein the medicament or the phototherapeutic agent is for the treatment of a benign or malignant tumour.

20 40. The use of any one of claims 36 to 39, wherein the medicament or the phototherapeutic agent is for the treatment of early cancer; cervical dysplasia; soft tissue sarcoma; a germ cell tumour; retinoblastoma; age-related macular degeneration; lymphoma; Hodgkin's lymphoma; head and neck cancer; oral or mouth cancer; or cancer of the blood, prostate, cervix, uterus, vaginal or other
25 female adnexa, breast, naso-pharynx, trachea, larynx, bronchi, bronchioles, lung, hollow organs, esophagus, stomach, bile duct, intestine, colon, colorectum, rectum, bladder, ureter, kidney, liver, gall bladder, spleen, brain, lymphatic system, bones, skin or pancreas.

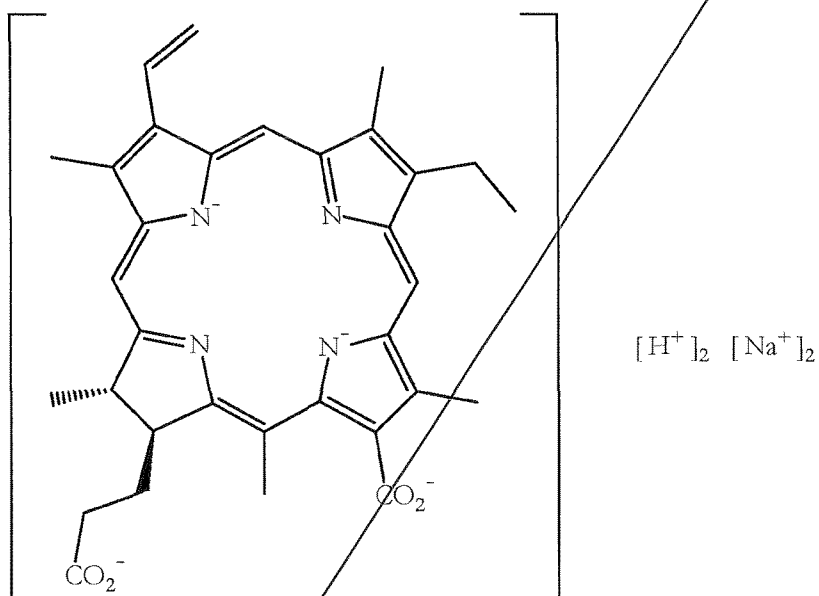
30 41. Use of chlorin e4 sodium of any one of claims 1-4 or 14-24 in the manufacture of a photodiagnostic agent for use in photodynamic diagnosis.

42. The use of any one of claims 36 to 41, wherein the medicament, the phototherapeutic agent or the photodiagnostic agent is adapted for administration prior to administration of irradiation.

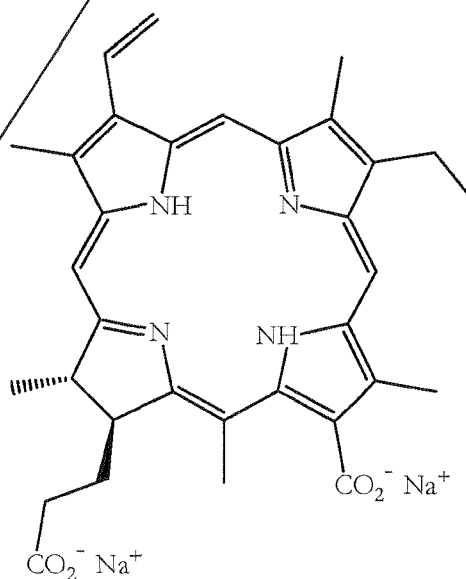
5 43. The use of claim 42, wherein the irradiation is electromagnetic radiation with a wavelength in the range of from 500nm to 1000nm.

Claims

1. Chlorin e4 sodium.
- 5 2. Chlorin e4 sodium, comprising chlorin e4 and sodium in a ratio of 1:2.
3. Chlorin e4 sodium, having the structure:



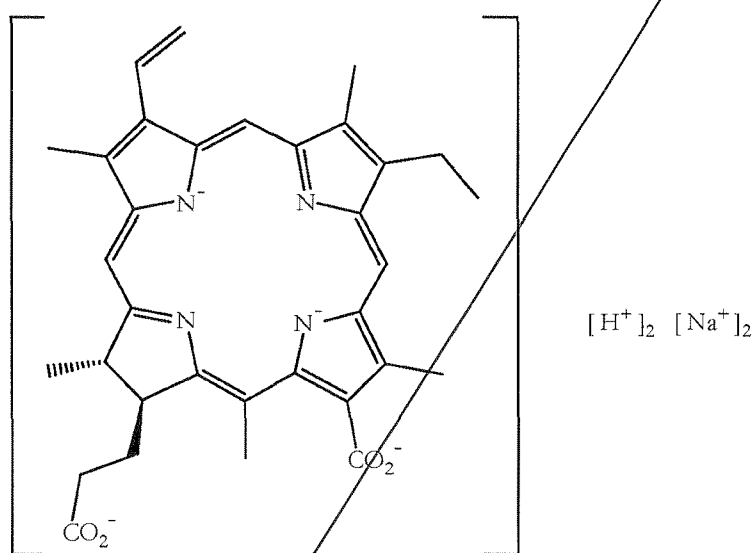
- 10 4. Chlorin e4 sodium, having the structure:



5. A process of preparing chlorin e4 sodium, comprising the step of reacting chlorin e4 with a sodium compound.

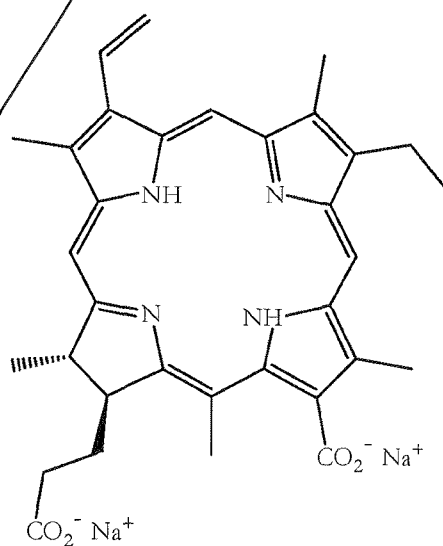
6. The process of claim 5, wherein the chlorin e4 sodium obtained comprises
5 chlorin e4 and sodium in a ratio of 1:2.

7. The process of claim 5 or 6, wherein the chlorin e4 sodium obtained has the structure:



10

8. The process of any one of claims 5 to 7, wherein the chlorin e4 sodium obtained has the structure:



9. The process of any one of claims 5 to 8, wherein the sodium compound is sodium hydroxide.

10. The process of any one of claims 5 to 9, wherein chlorin e4 is reacted with
5 the sodium compound in the presence of a base.

11. The process of claim 10, wherein the base is an amine base.

12. The process of claim 11, wherein the amine base is thiamine pyrophosphate.

10

13. The process of any one of claims 5 to 12, wherein chlorin e4, the sodium compound and the optional base are used in a molar ratio of 0.15-1 : 45-60 : 0-12.

14. Chlorin e4 sodium preparable by a process of any one of claims 5 to 13.

15

15. Chlorin e4 sodium when prepared by a process of any one of claims 5 to 13.

16. The chlorin e4 sodium of any one of claims 1-4 or 14-15, for use in medicine.

20

17. The chlorin e4 sodium of any one of claims 1-4 or 14-16, for use in photodynamic therapy or cytoluminescent therapy.

18. The chlorin e4 sodium of any one of claims 1-4 or 14-17, for the treatment
25 of atherosclerosis; multiple sclerosis; diabetes; diabetic retinopathy; arthritis; rheumatoid arthritis; a fungal, viral, chlamydial, bacterial, nanobacterial or parasitic infectious disease; HIV; Aids; infection with sars virus, Asian (chicken) flu virus, herpes simplex or herpes zoster; hepatitis; viral hepatitis; a cardiovascular disease; coronary artery stenosis; carotid artery stenosis; intermittent claudication; a
30 dermatological condition; acne; psoriasis; a disease characterised by benign or malignant cellular hyperproliferation or by areas of neovascularisation; a benign or malignant tumour; early cancer; cervical dysplasia; soft tissue sarcoma; a germ cell tumour; retinoblastoma; age-related macular degeneration; lymphoma; Hodgkin's

lymphoma; head and neck cancer; oral or mouth cancer; or cancer of the blood, prostate, cervix, uterus, vaginal or other female adnexa, breast, naso-pharynx, trachea, larynx, bronchi, bronchioles, lung, hollow organs, esophagus, stomach, bile duct, intestine, colon, colorectum, rectum, bladder, ureter, kidney, liver, gall
5 bladder, spleen, brain, lymphatic system, bones, skin or pancreas.

19. The chlorin e4 sodium of any one of claims 1-4 or 14-18, for the treatment of a disease characterised by benign or malignant cellular hyperproliferation or by areas of neovascularisation.

10

20. The chlorin e4 sodium of any one of claims 1-4 or 14-19, for the treatment of a benign or malignant tumour.

21. The chlorin e4 sodium of any one of claims 1-4 or 14-20, for the treatment
15 of early cancer; cervical dysplasia; soft tissue sarcoma; a germ cell tumour; retinoblastoma; age-related macular degeneration; lymphoma; Hodgkin's lymphoma; head and neck cancer; oral or mouth cancer; or cancer of the blood, prostate, cervix, uterus, vaginal or other female adnexa, breast, naso-pharynx, trachea, larynx, bronchi, bronchioles, lung, hollow organs, esophagus, stomach, bile duct, intestine,
20 colon, colorectum, rectum, bladder, ureter, kidney, liver, gall bladder, spleen, brain, lymphatic system, bones, skin or pancreas.

22. The chlorin e4 sodium of any one of claims 1-4 or 14-16, for use in photodynamic diagnosis.

25

23. The chlorin e4 sodium of any one of claims 16 to 22, wherein the chlorin e4 sodium is adapted for administration prior to administration of irradiation.

24. The chlorin e4 sodium of claim 23, wherein the irradiation is electromagnetic
30 radiation with a wavelength in the range of from 500nm to 1000nm.

25. A pharmaceutical composition comprising chlorin e4 sodium of any one of claims 1-4 or 14-24 and a pharmaceutically acceptable carrier or diluent.

26. The pharmaceutical composition of claim 25, for use in photodynamic therapy or cytoluminescent therapy.

5 27. The pharmaceutical composition of claim 25 or 26, for the treatment of atherosclerosis; multiple sclerosis; diabetes; diabetic retinopathy; arthritis; rheumatoid arthritis; a fungal, viral, chlamydial, bacterial, nanobacterial or parasitic infectious disease; HIV; Aids; infection with sars virus, Asian (chicken) flu virus, herpes simplex or herpes zoster; hepatitis; viral hepatitis; a cardiovascular disease;
10 coronary artery stenosis; carotid artery stenosis; intermittent claudication; a dermatological condition; acne; psoriasis; a disease characterised by benign or malignant cellular hyperproliferation or by areas of neovascularisation; a benign or malignant tumour; early cancer; cervical dysplasia; soft tissue sarcoma; a germ cell tumour; retinoblastoma; age-related macular degeneration; lymphoma; Hodgkin's
15 lymphoma; head and neck cancer; oral or mouth cancer; or cancer of the blood, prostate, cervix, uterus, vaginal or other female adnexa, breast, naso-pharynx, trachea, larynx, bronchi, bronchioles, lung, hollow organs, esophagus, stomach, bile duct, intestine, colon, colorectum, rectum, bladder, ureter, kidney, liver, gall bladder, spleen, brain, lymphatic system, bones, skin or pancreas.

20 28. The pharmaceutical composition of any one of claims 25 to 27, for the treatment of a disease characterised by benign or malignant cellular hyperproliferation or by areas of neovascularisation.

25 29. The pharmaceutical composition of any one of claims 25 to 28, for the treatment of a benign or malignant tumour.

30 30. The pharmaceutical composition of any one of claims 25 to 29, for the treatment of early cancer; cervical dysplasia; soft tissue sarcoma; a germ cell tumour; retinoblastoma; age-related macular degeneration; lymphoma; Hodgkin's lymphoma; head and neck cancer; oral or mouth cancer; or cancer of the blood, prostate, cervix, uterus, vaginal or other female adnexa, breast, naso-pharynx, trachea, larynx, bronchi, bronchioles, lung, hollow organs, esophagus, stomach, bile duct, intestine,

colon, colorectum, rectum, bladder, ureter, kidney, liver, gall bladder, spleen, brain, lymphatic system, bones, skin or pancreas.

31. The pharmaceutical composition of claim 25, for use in photodynamic
5 diagnosis.

32. The pharmaceutical composition of any one of claims 25 to 31, wherein the pharmaceutical composition is adapted for administration prior to administration of irradiation.

10

33. The pharmaceutical composition claim 32, wherein the irradiation is electromagnetic radiation with a wavelength in the range of from 500nm to 1000nm.

15

34. The pharmaceutical composition of any one of claims 25 to 33, wherein the pharmaceutical composition is in a form suitable for oral, parental (including intravenous, subcutaneous, intramuscular, intradermal, intratracheal, intraperitoneal, intraarticular, intraabdominal, intracranial and epidural), transdermal, airway (aerosol), rectal, vaginal or topical (including buccal, mucosal and sublingual) administration.

20

35. The pharmaceutical composition of claim 34, wherein the pharmaceutical composition is in a form suitable for oral or parental administration.

25

36. Use of chlorin e4 sodium of any one of claims 1-4 or 14-24 in the manufacture of a medicament for the treatment of atherosclerosis; multiple sclerosis; diabetes; diabetic retinopathy; arthritis; rheumatoid arthritis; a fungal, viral, chlamydial, bacterial, nanobacterial or parasitic infectious disease; HIV; Aids; infection with sars virus, Asian (chicken) flu virus, herpes simplex or herpes zoster; hepatitis; viral hepatitis; a cardiovascular disease; coronary artery stenosis; carotid
30 artery stenosis; intermittent claudication; a dermatological condition; acne; psoriasis; a disease characterised by benign or malignant cellular hyperproliferation or by areas of neovascularisation; a benign or malignant tumour; early cancer; cervical dysplasia; soft tissue sarcoma; a germ cell tumour; retinoblastoma; age-related macular

degeneration; lymphoma; Hodgkin's lymphoma; head and neck cancer; oral or mouth cancer; or cancer of the blood, prostate, cervix, uterus, vaginal or other female adnexa, breast, naso-pharynx, trachea, larynx, bronchi, bronchioles, lung, hollow organs, esophagus, stomach, bile duct, intestine, colon, colorectum, rectum, bladder, ureter, kidney, liver, gall bladder, spleen, brain, lymphatic system, bones, skin or pancreas.

37. Use of chlorin e4 sodium of any one of claims 1-4 or 14-24 in the manufacture of a phototherapeutic agent for use in photodynamic therapy or cytoluminescent therapy.

38. The use of claim 37, wherein the phototherapeutic agent is for the treatment of atherosclerosis; multiple sclerosis; diabetes; diabetic retinopathy; arthritis; rheumatoid arthritis; a fungal, viral, chlamydial, bacterial, nanobacterial or parasitic infectious disease; HIV; Aids; infection with sars virus, Asian (chicken) flu virus, herpes simplex or herpes zoster; hepatitis; viral hepatitis; a cardiovascular disease; coronary artery stenosis; carotid artery stenosis; intermittent claudication; a dermatological condition; acne; psoriasis; a disease characterised by benign or malignant cellular hyperproliferation or by areas of neovascularisation; a benign or malignant tumour; early cancer; cervical dysplasia; soft tissue sarcoma; a germ cell tumour; retinoblastoma; age-related macular degeneration; lymphoma; Hodgkin's lymphoma; head and neck cancer; oral or mouth cancer; or cancer of the blood, prostate, cervix, uterus, vaginal or other female adnexa, breast, naso-pharynx, trachea, larynx, bronchi, bronchioles, lung, hollow organs, esophagus, stomach, bile duct, intestine, colon, colorectum, rectum, bladder, ureter, kidney, liver, gall bladder, spleen, brain, lymphatic system, bones, skin or pancreas.

39. The use of any one of claims 36 to 38, wherein the medicament or the phototherapeutic agent is for the treatment of a disease characterised by benign or malignant cellular hyperproliferation or by areas of neovascularisation.

40. The use of any one of claims 36 to 39, wherein the medicament or the phototherapeutic agent is for the treatment of a benign or malignant tumour.

41. The use of any one of claims 36 to 40, wherein the medicament or the phototherapeutic agent is for the treatment of early cancer; cervical dysplasia; soft tissue sarcoma; a germ cell tumour; retinoblastoma; age-related macular degeneration; lymphoma; Hodgkin's lymphoma; head and neck cancer; oral or mouth cancer; or cancer of the blood, prostate, cervix, uterus, vaginal or other female adnexa, breast, nasopharynx, trachea, larynx, bronchi, bronchioles, lung, hollow organs, esophagus, stomach, bile duct, intestine, colon, colorectum, rectum, bladder, ureter, kidney, liver, gall bladder, spleen, brain, lymphatic system, bones, skin or pancreas.

42. Use of chlorin e4 sodium of any one of claims 1-4 or 14-24 in the manufacture of a photodiagnostic agent for use in photodynamic diagnosis.

43. The use of any one of claims 36 to 42, wherein the medicament, the phototherapeutic agent or the photodiagnostic agent is adapted for administration prior to administration of irradiation.

44. The use of claim 43, wherein the irradiation is electromagnetic radiation with a wavelength in the range of from 500nm to 1000nm.