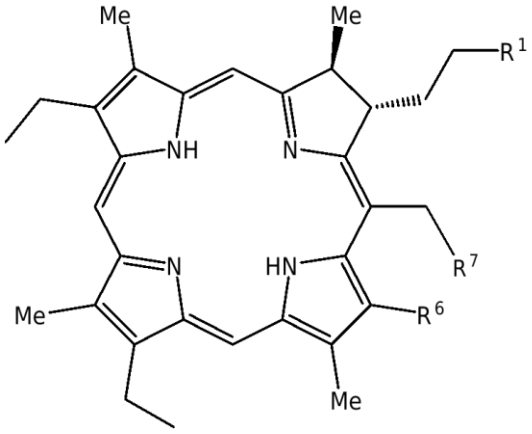
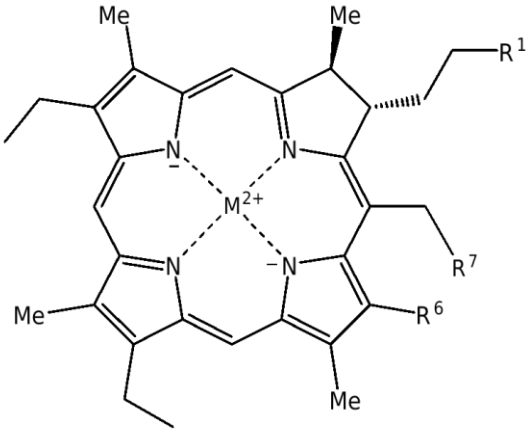
Claims

1. A compound of formula (1) or a complex of formula (2):



(1)



(2)

or a pharmaceutically acceptable salt thereof, wherein:

-R^1 is selected from -CH_2OR^2, -CH_2SR^2, -$CH_2S(O)R^2$, -$CH_2S(O)_2R^2$, -$CH_2N(R^2)_2$, -R^2, -C(O)-OR^3, -C(O)-SR^3, -C(O)-$N(R^3)_2$, -C(S)-OR^3, -C(S)-SR^3 or -C(S)-$N(R^3)_2$;

-R^2, each independently, is selected from -H, -C(O)R^4, -C(O)-OR^4, -C(O)-SR^4, -C(O)-$N(R^4)_2$, -C(S)-OR^4, -C(S)-SR^4, -C(S)-$N(R^4)_2$, -R^α-H, -R^β, -R^α-R^β, -R^α-OH, -R^α-OR^β, -R^α-SH, -R^α-SR^β, -R^α-S(O)R^β, -R^α-$S(O)_2R^\beta$, -R^α-NH_2, -R^α-NH(R^β), -R^α-$N(R^\beta)_2$, -R^α-X, -R^α-$[N(R^5)_3]$Y, -R^α-$[P(R^5)_3]$Y, -R^α-$[R^8]$Y, -R^α-$[N(R^5)_2(R^{5'})]$, -R^α-$[P(R^5)_2(R^{5'})]$ or -R^α-$[R^{8'}]$;

-R^3 and -R^4, each independently, is selected from -H, -R^α-H, -R^β, -R^α-R^β, -R^α-OH, -R^α-OR^β, -R^α-SH, -R^α-SR^β, -R^α-NH_2, -R^α-NH(R^β), -R^α-$N(R^\beta)_2$, -R^α-X, -R^α-$[N(R^5)_3]$Y, -R^α-$[P(R^5)_3]$Y, -R^α-$[R^8]$Y, -R^α-$[N(R^5)_2(R^{5'})]$, -R^α-$[P(R^5)_2(R^{5'})]$ or -R^α-$[R^{8'}]$;

-R^α-, each independently, is selected from a C_1-C_{42} alkylene group, wherein the alkylene group may optionally be substituted with one or more C_1-C_4 alkyl, C_1-C_4 haloalkyl or halo groups, and wherein one or more carbon atoms in the backbone of the alkylene group may optionally be replaced by a heteroatom or group independently selected from O, S, NH or NMe;

-R^β, each independently, is a saturated or unsaturated hydrocarbyl group, wherein the hydrocarbyl group may be straight-chained or branched, or be or include cyclic groups, wherein the hydrocarbyl group may optionally be substituted, and wherein the hydrocarbyl group may optionally include one or more heteroatoms N, O, S, P and Se in its carbon skeleton;

-R^5, each independently, is selected from C_1-C_4 alkyl, C_1-C_4 haloalkyl, -$(CH_2CH_2O)_n$-H, -$(CH_2CH_2O)_n$-CH_3, phenyl or C_5-C_6 heteroaryl, wherein the phenyl or C_5-C_6 heteroaryl may optionally be substituted with one or more C_1-C_6 alkyl,

C_1-C_6 haloalkyl, -O(C_1-C_6 alkyl), -O(C_1-C_6 haloalkyl), halo, -CO_2H, -CO_2Z, -CO_2NH_2, -O-$(CH_2CH_2O)_n$-H or -O-$(CH_2CH_2O)_n$-CH_3 groups;

-$R^{5'}$ is selected from C_1-C_4 alkyl, C_1-C_4 haloalkyl, -$(CH_2CH_2O)_n$-H, -$(CH_2CH_2O)_n$-CH_3, phenyl or C_5-C_6 heteroaryl, each substituted with -CO_2^-, wherein the phenyl or C_5-C_6 heteroaryl may optionally be further substituted with one or more C_1-C_6 alkyl, C_1-C_6 haloalkyl, -O(C_1-C_6 alkyl), -O(C_1-C_6 haloalkyl), halo, -CO_2H, -CO_2Z, -CO_2NH_2, -O-$(CH_2CH_2O)_n$-H or -O-$(CH_2CH_2O)_n$-CH_3 groups;

-R^6 is selected from hydrogen, -C(O)-OR^3, -C(O)-SR^3, -C(O)-$N(R^3)_2$, -C(S)-OR^3, -C(S)-SR^3 or -C(S)-$N(R^3)_2$;

-R^7 is selected from hydrogen, -C(O)-OR^3, -C(O)-SR^3, -C(O)-$N(R^3)_2$, -C(S)-OR^3, -C(S)-SR^3 or -C(S)-$N(R^3)_2$;

or -R^6 and -R^7 together form –C(O)-O–;

-R^8 is -$[NC_5H_5]$ optionally substituted with one or more C_1-C_6 alkyl, C_1-C_6 haloalkyl, -O(C_1-C_6 alkyl), -O(C_1-C_6 haloalkyl), halo, -CO_2H, -CO_2Z, -CO_2NH_2, -O-$(CH_2CH_2O)_n$-H or -O-$(CH_2CH_2O)_n$-CH_3 groups;

-$R^{8'}$ is -$[NC_5H_5]$ substituted with -CO_2^- and optionally further substituted with one or more C_1-C_6 alkyl, C_1-C_6 haloalkyl, -O(C_1-C_6 alkyl), -O(C_1-C_6 haloalkyl), halo, -CO_2H, -CO_2Z, -CO_2NH_2, -O-$(CH_2CH_2O)_n$-H or -O-$(CH_2CH_2O)_n$-CH_3 groups;

n is 1, 2, 3, 4, 5 or 6;

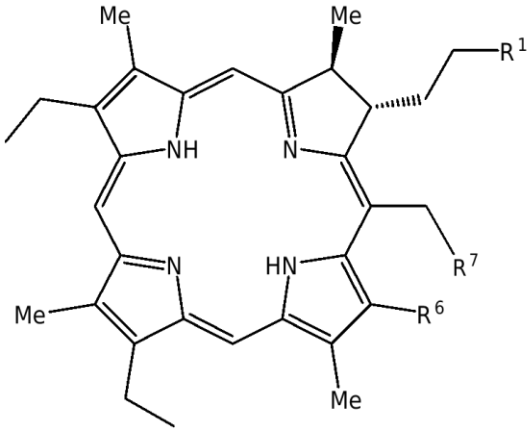
X is a halo group;

Y is a counter anion;

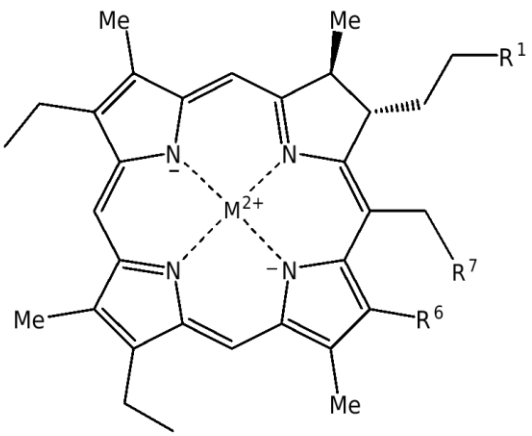
Z is a counter cation; and

M^{2+} is a metal cation.

2. A compound of formula (1) or a complex of formula (2):



(1)



(2)

or a pharmaceutically acceptable salt thereof, for use in medicine, wherein:

-R^1 is selected from -CH_2OR^2, -CH_2SR^2, -$CH_2S(O)R^2$, -$CH_2S(O)_2R^2$, -$CH_2N(R^2)_2$, -R^2, -C(O)-OR^3, -C(O)-SR^3, -C(O)-$N(R^3)_2$, -C(S)-OR^3, -C(S)-SR^3 or -C(S)-$N(R^3)_2$;

-R^2, each independently, is selected from -H, -C(O)R^4, -C(O)-OR^4, -C(O)-SR^4, -C(O)-$N(R^4)_2$, -C(S)-OR^4, -C(S)-SR^4, -C(S)-$N(R^4)_2$, -R^α-H, -R^β, -R^α-R^β, -R^α-OH, -R^α-OR^β, -R^α-SH, -R^α-SR^β, -R^α-S(O)R^β, -R^α-$S(O)_2R^\beta$, -R^α-NH_2, -R^α-NH(R^β), -R^α-$N(R^\beta)_2$, -R^α-X, -R^α-$[N(R^5)_3]$Y, -R^α-$[P(R^5)_3]$Y, -R^α-$[R^8]$Y, -R^α-$[N(R^5)_2(R^{5'})]$, -R^α-$[P(R^5)_2(R^{5'})]$ or -R^α-$[R^{8'}]$;

-R^3 and -R^4, each independently, is selected from -H, -R^α-H, -R^β, -R^α-R^β, -R^α-OH, -R^α-OR^β, -R^α-SH, -R^α-SR^β, -R^α-NH_2, -R^α-NH(R^β), -R^α-$N(R^\beta)_2$, -R^α-X, -R^α-$[N(R^5)_3]$Y, -R^α-$[P(R^5)_3]$Y, -R^α-$[R^8]$Y, -R^α-$[N(R^5)_2(R^{5'})]$, -R^α-$[P(R^5)_2(R^{5'})]$ or -R^α-$[R^{8'}]$;

-R^α-, each independently, is selected from a C_1-C_{42} alkylene group, wherein the alkylene group may optionally be substituted with one or more C_1-C_4 alkyl, C_1-C_4 haloalkyl or halo groups, and wherein one or more carbon atoms in the backbone of the alkylene group may optionally be replaced by a heteroatom or group independently selected from O, S, NH or NMe;

-R^β, each independently, is a saturated or unsaturated hydrocarbyl group, wherein the hydrocarbyl group may be straight-chained or branched, or be or include cyclic groups, wherein the hydrocarbyl group may optionally be substituted, and wherein the hydrocarbyl group may optionally include one or more heteroatoms N, O, S, P and Se in its carbon skeleton;

-R^5, each independently, is selected from C_1-C_4 alkyl, C_1-C_4 haloalkyl, -$(CH_2CH_2O)_n$-H, -$(CH_2CH_2O)_n$-CH_3, phenyl or C_5-C_6 heteroaryl, wherein the phenyl or C_5-C_6 heteroaryl may optionally be substituted with one or more C_1-C_6 alkyl, C_1-C_6 haloalkyl, -O(C_1-C_6 alkyl), -O(C_1-C_6 haloalkyl), halo, -CO_2H, -CO_2Z, -CO_2NH_2, -O-$(CH_2CH_2O)_n$-H or -O-$(CH_2CH_2O)_n$-CH_3 groups;

-$R^{5'}$ is selected from C_1-C_4 alkyl, C_1-C_4 haloalkyl, -$(CH_2CH_2O)_n$-H, -$(CH_2CH_2O)_n$-CH_3, phenyl or C_5-C_6 heteroaryl, each substituted with -CO_2^-, wherein the phenyl or C_5-C_6 heteroaryl may optionally be further substituted with one or more C_1-C_6 alkyl, C_1-C_6 haloalkyl, -O(C_1-C_6 alkyl), -O(C_1-C_6 haloalkyl), halo, -CO_2H, -CO_2Z, -CO_2NH_2, -O-$(CH_2CH_2O)_n$-H or -O-$(CH_2CH_2O)_n$-CH_3 groups;

-R^6 is selected from hydrogen, -C(O)-OR^3, -C(O)-SR^3, -C(O)-$N(R^3)_2$, -C(S)-OR^3, -C(S)-SR^3 or -C(S)-$N(R^3)_2$;

-R^7 is selected from hydrogen, -C(O)-OR^3, -C(O)-SR^3, -C(O)-$N(R^3)_2$, -C(S)-OR^3, -C(S)-SR^3 or -C(S)-$N(R^3)_2$;

or -R^6 and -R^7 together form –C(O)-O–;

$-R^8$ is $-[NC_5H_5]$ optionally substituted with one or more C_1-C_6 alkyl, C_1-C_6 haloalkyl, $-O(C_1$-C_6 alkyl), $-O(C_1$-C_6 haloalkyl), halo, $-CO_2H$, $-CO_2Z$, $-CO_2NH_2$, $-O-(CH_2CH_2O)_n-H$ or $-O-(CH_2CH_2O)_n-CH_3$ groups;

$-R^{8'}$ is $-[NC_5H_5]$ substituted with $-CO_2^-$ and optionally further substituted with one or more C_1-C_6 alkyl, C_1-C_6 haloalkyl, $-O(C_1$-C_6 alkyl), $-O(C_1$-C_6 haloalkyl), halo, $-CO_2H$, $-CO_2Z$, $-CO_2NH_2$, $-O-(CH_2CH_2O)_n-H$ or $-O-(CH_2CH_2O)_n-CH_3$ groups;

n is 1, 2, 3, 4, 5 or 6;

X is a halo group;

Y is a counter anion;

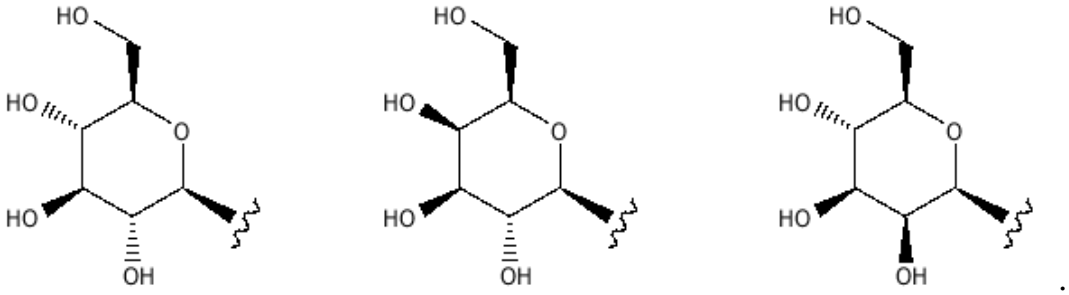
Z is a counter cation; and

M^{2+} is a metal cation.

3. The compound or complex according to claim 1 or 2, wherein each $-R^{\alpha}-$ is independently selected from C_1-C_6 alkylene.

4. The compound or complex according to any preceding claim, wherein at least one of $-R^2$, $-R^3$ and $-R^4$ is selected from $-R^{\alpha}-OR^{\beta}$ or $-R^{\alpha}-SR^{\beta}$, and $-R^{\beta}$ is a saccharidyl group.

5. The compound or complex according to claim 4, wherein $-R^{\beta}$ is a saccharidyl group selected from:



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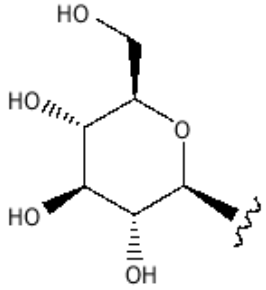
6. The compound or complex according to claim 5, wherein the saccharidyl group is:



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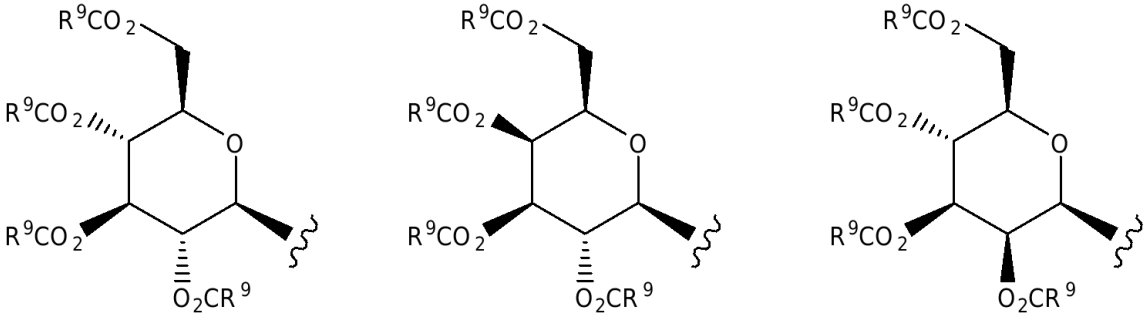
7. The compound or complex according to claim 5, wherein -R^{β} is a saccharidyl group selected from:



wherein -R^9 is selected from C_1-C_4 alkyl.

8. The compound or complex according to claim 7, wherein -R^9 is methyl.

9. The compound or complex according to any preceding claim, wherein -R^1 is -C(O)-N(R^3)$_2$.

10. The compound or complex according to claim 9, wherein -R^1 is -C(O)-N(R^3)($R^{3'}$), wherein -R^3 is selected from -R^{α}-OR^{β} or -R^{α}-SR^{β} and -R^{β} is a saccharidyl group, and -$R^{3'}$ is H or C_1-C_4 alkyl.

11. The compound or complex according to any preceding claim, wherein -R^6 is hydrogen.

12. The compound or complex according to any one of claims 1-10, wherein -R^6 is -C(O)-OR^3 and -R^3 is C_1-C_4 alkyl.

13. The compound or complex according to any one of claims 1-10, wherein -R^6 is selected from -C(O)-OR^3, -C(O)-SR^3 or -C(O)-N(R^3)($R^{3'}$), wherein -R^3 is selected from

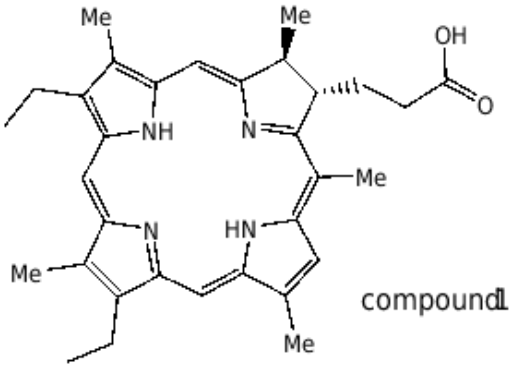
-R^{α}-OR^{β}, -R^{α}-SR^{β}, -R^{α}-$S(O)R^{\beta}$ or -R^{α}-$S(O)_2R^{\beta}$, and -R^{β} is a saccharidyl group, and -$R^{3'}$ is H or C_1-C_4 alkyl.

14. The compound or complex according to any preceding claim, wherein -R^7 is hydrogen.

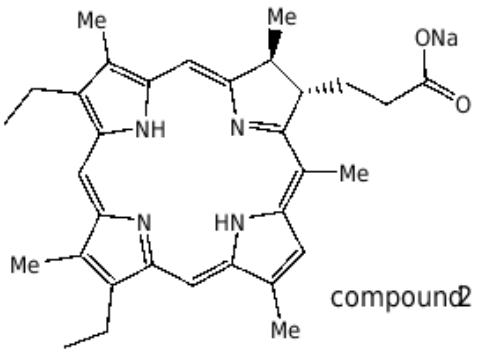
15. The compound or complex according to any one of claims 1-13, wherein -R^7 is -C(O)-OR^3 and -R^3 is C_1-C_4 alkyl.

16. The compound or complex according to any one of claims 1-13, wherein -R^7 is selected from -C(O)-OR^3, -C(O)-SR^3 or -C(O)-$N(R^3)(R^{3'})$, wherein -R^3 is selected from -R^{α}-OR^{β}, -R^{α}-SR^{β}, -R^{α}-$S(O)R^{\beta}$ or -R^{α}-$S(O)_2R^{\beta}$, and -R^{β} is a saccharidyl group, and -$R^{3'}$ is H or C_1-C_4 alkyl.

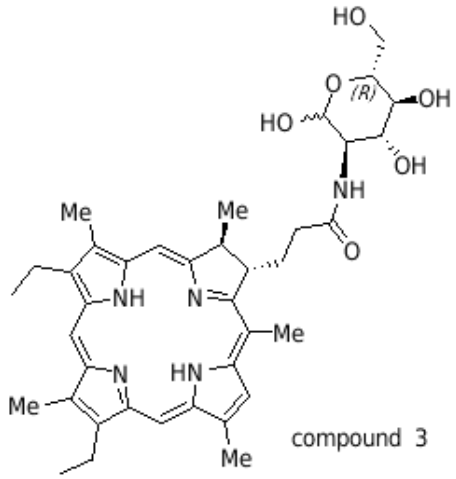
17. The compound or complex according to claim 1 or 2, wherein the compound or complex is:



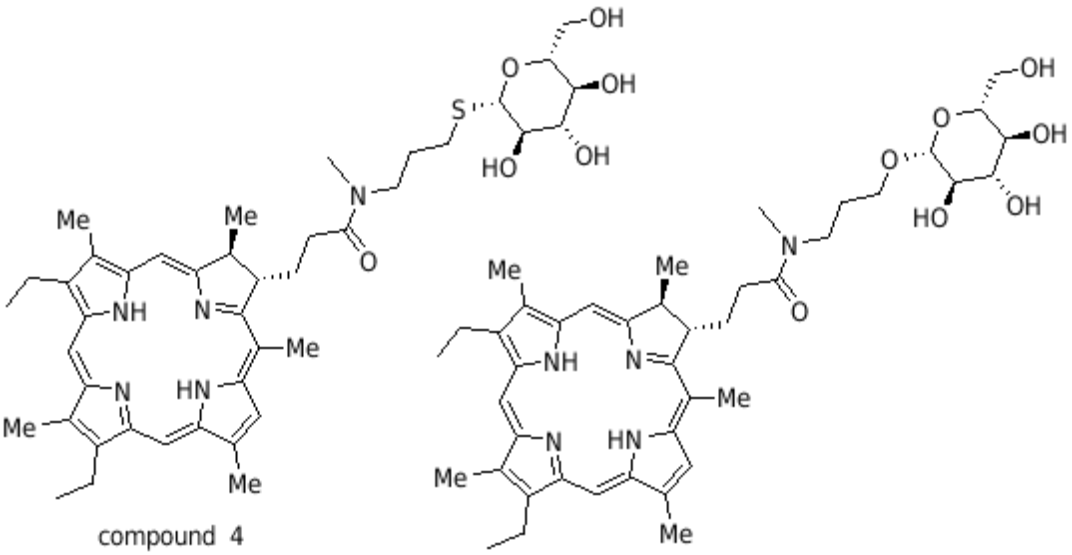
compound 1



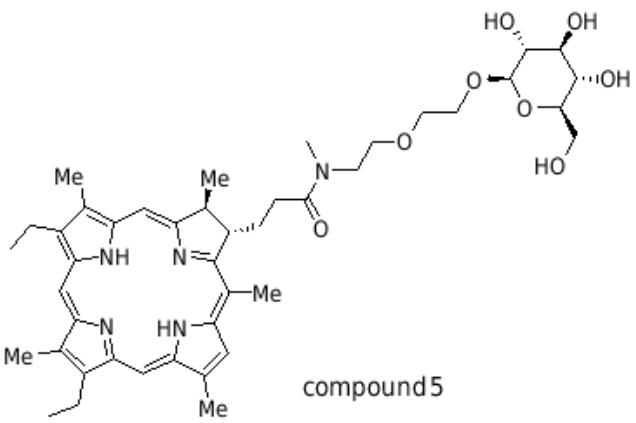
compound 2



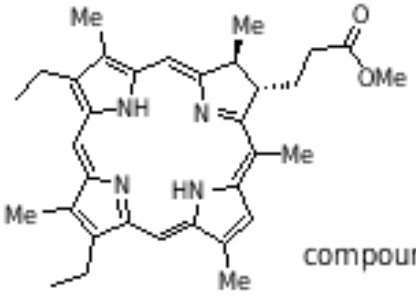
compound 3



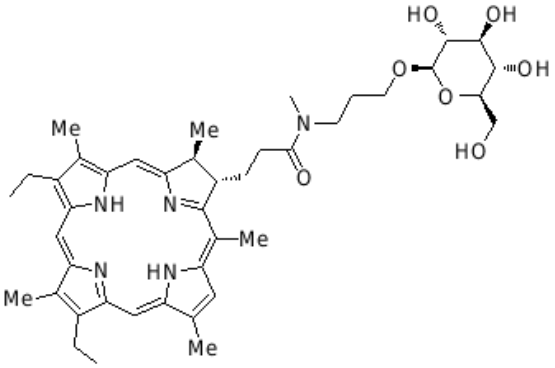
compound 4

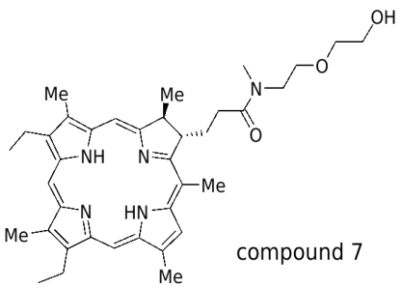


compound 5



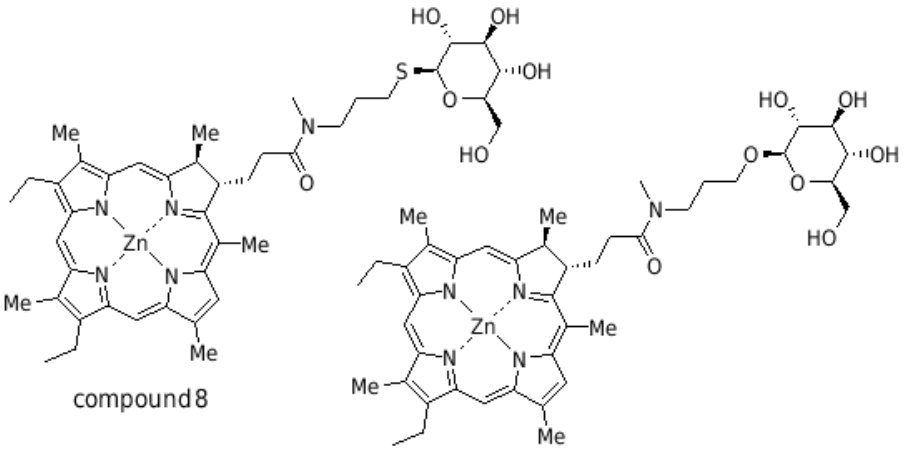
compound 6



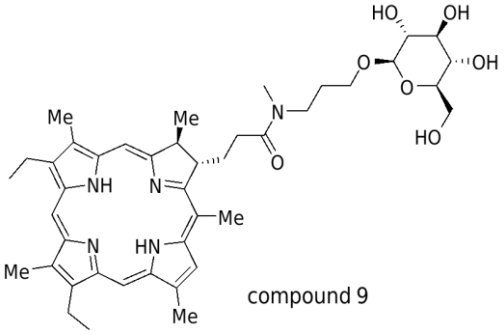


compound 7

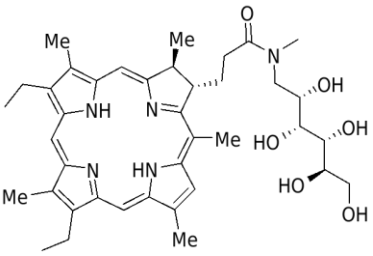
5



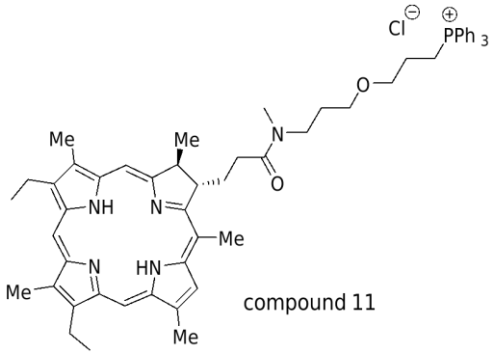
compound 8



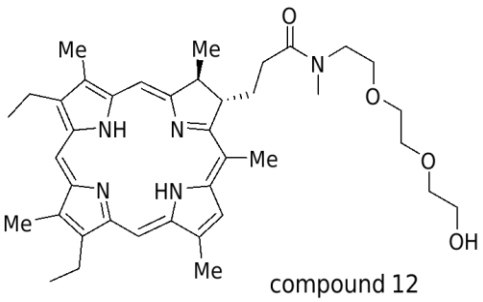
compound 9



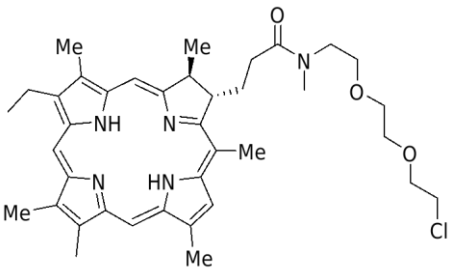
compound 10



compound 11

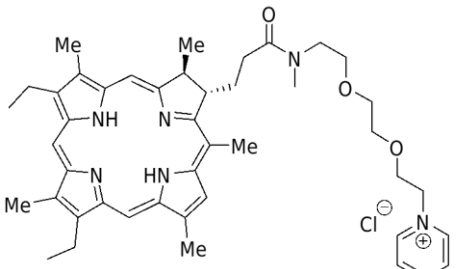


compound 12

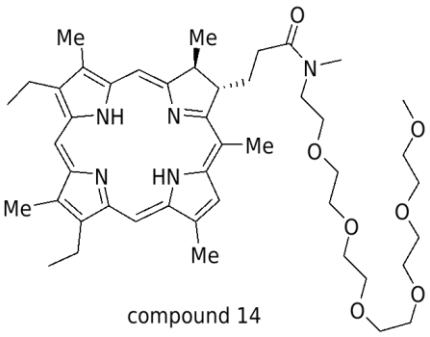


compound 13A

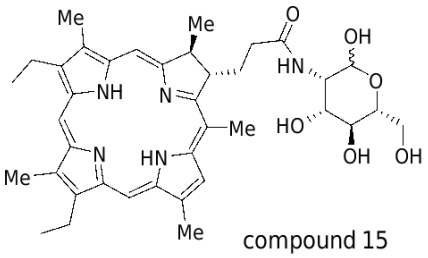
5



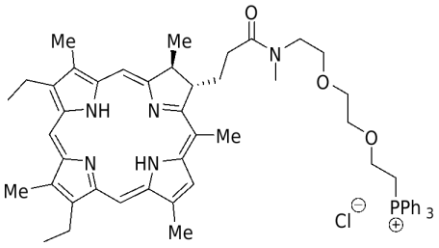
compound 13



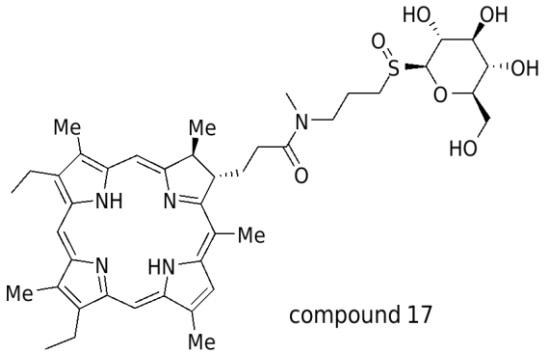
compound 14



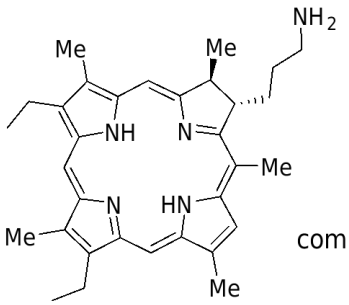
compound 15



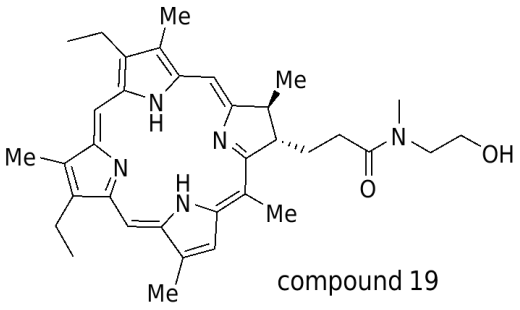
compound 16



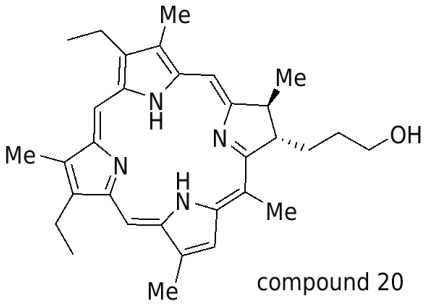
compound 17



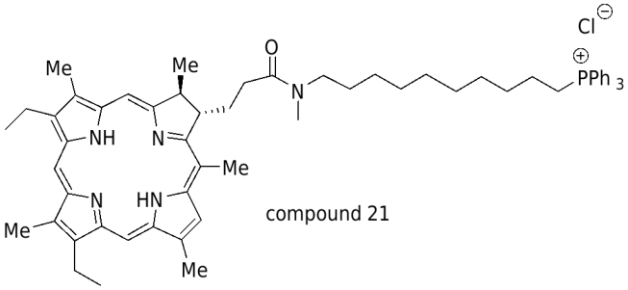
compound 18



compound 19



compound 20



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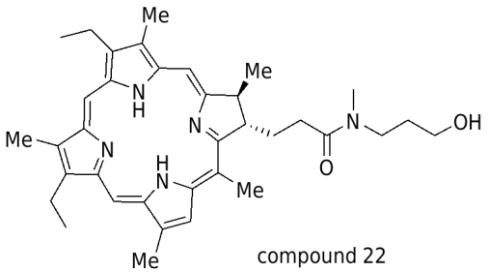

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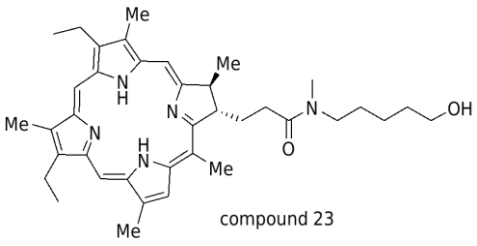

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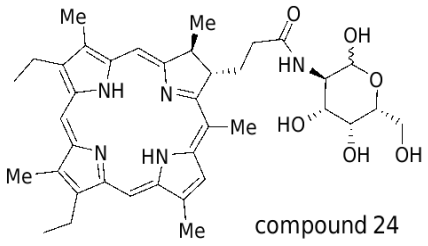

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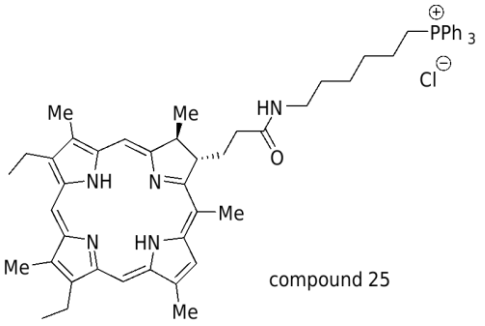

compound 25

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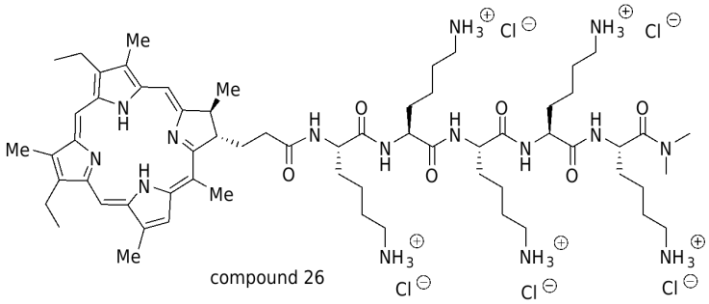
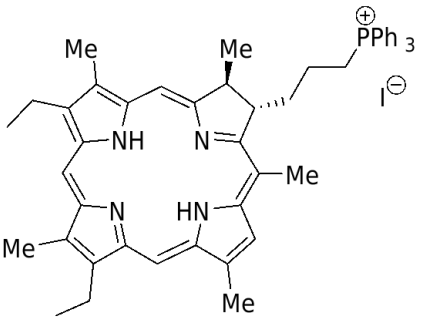


compound 26



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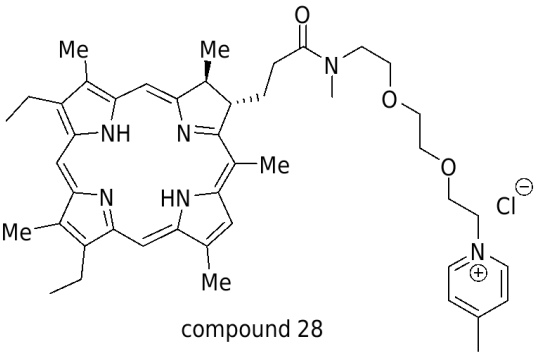

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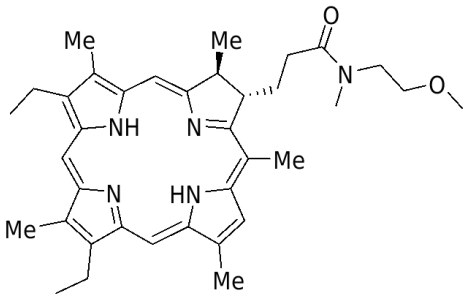

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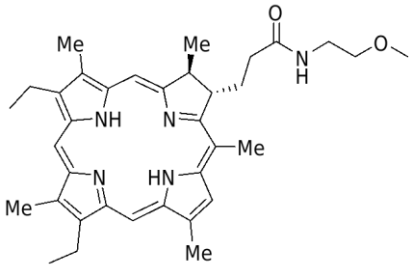
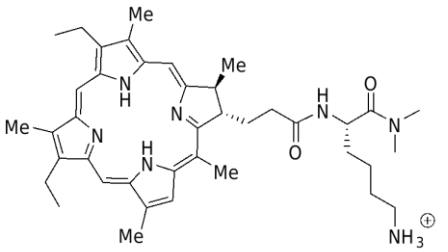


compound 30



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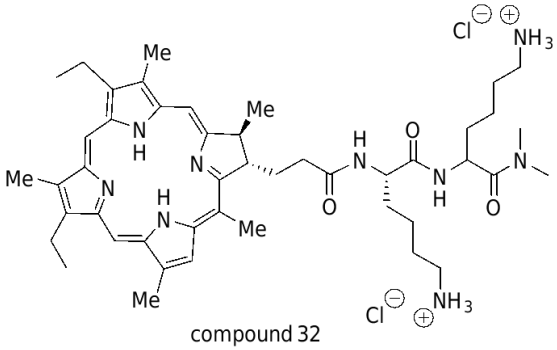

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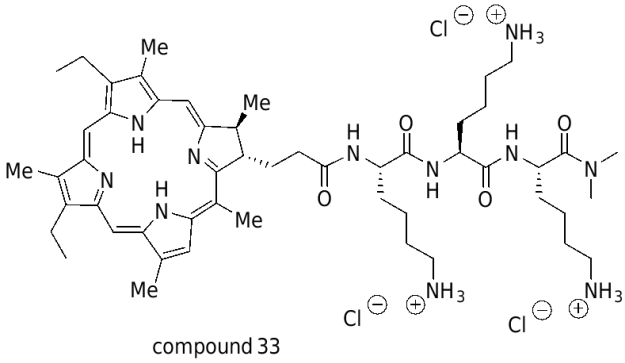

compound 33

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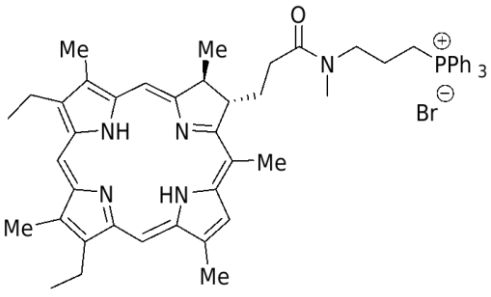

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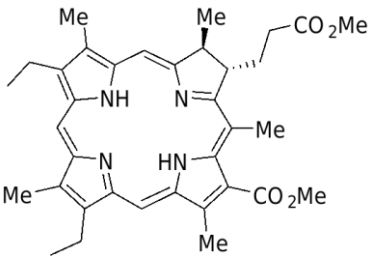

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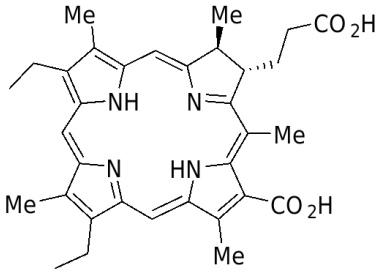
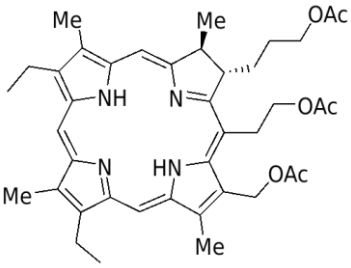


compound 36



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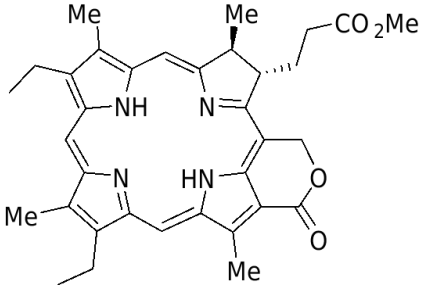
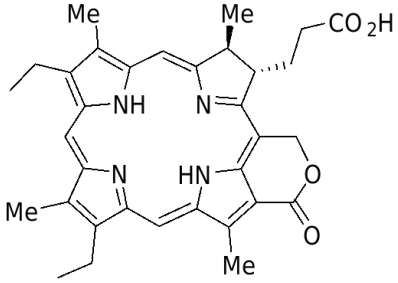


compound 38



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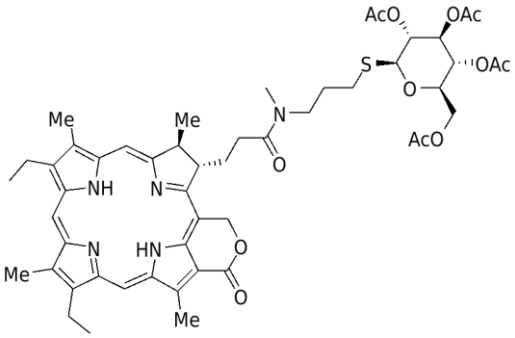
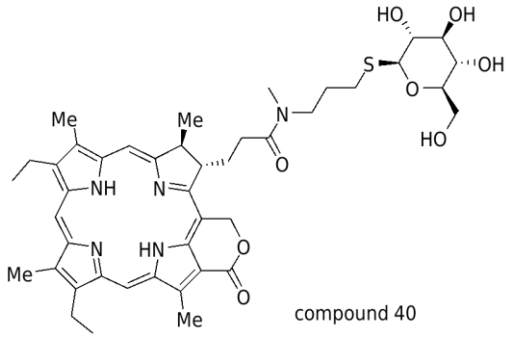
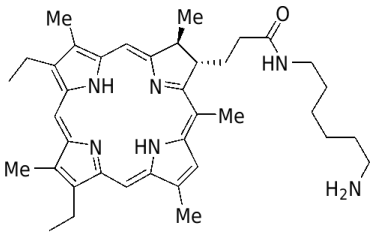


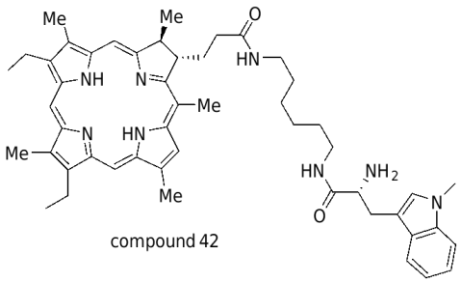


compound 40

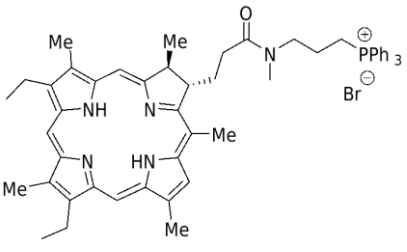
5



compound 41



compound 42



compound 43

;

or a metal cation complex thereof, or a pharmaceutically acceptable salt thereof.

18. The compound or complex according to claim 1 or 2, wherein the compound is reduced phyllochlorin in the form of a pharmaceutically acceptable salt.

19. The compound or complex according to claim 18, wherein the compound is reduced phyllochlorin mono-sodium.

20. The compound or complex according to claim 2, wherein the compound is:
(1) reduced phyllochlorin free acid; or
(2) reduced phyllochlorin methyl ester.

21. The compound or complex according to any preceding claim, for use in:
(a) photodynamic therapy or cytoluminescent therapy; and/or
(b) 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 (preferably severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)), Asian (chicken) flu virus, Dengue 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; and/or
(c) the treatment of a disease characterised by benign or malignant cellular hyperproliferation or by areas of neovascularisation; and/or
(d) the treatment of a benign or malignant tumour; and/or
(e) 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; and/or

(f) photodynamic diagnosis.

22. The compound or complex according to any preceding claim, wherein the compound is adapted for administration prior to administration of irradiation.

23. The compound or complex according to claim 22, wherein the irradiation is electromagnetic radiation with a wavelength in the range of from 500nm to 1000nm.

24. A pharmaceutical composition comprising a compound or complex according to any preceding claim and a pharmaceutically acceptable carrier or diluent.

25. The pharmaceutical composition according to claim 24, further comprising:

(a) polyvinylpyrrolidone; and/or

(b) an immune checkpoint inhibitor; and/or

(c) an immune checkpoint inhibitor selected from Pembrolizumab, Nivolumab, Cemiplimab, Atezolizumab, Avelumab, Durvalumab or Ipilimumab.

26. The pharmaceutical composition according to claim 24 or 25, for use in:

(a) photodynamic therapy or cytoluminescent therapy; and/or

(b) 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 (preferably severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)), Asian (chicken) flu virus, Dengue 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; and/or

(c) the treatment of a disease characterised by benign or malignant cellular hyperproliferation or by areas of neovascularisation; and/or

(d) the treatment of a benign or malignant tumour; and/or

(e) 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; and/or

(f) photodynamic diagnosis.

27. The pharmaceutical composition according to any one of claims 24-26, wherein the pharmaceutical composition is:

(a) adapted for administration prior to administration of irradiation; and/or

(b) adapted for administration prior to administration of electromagnetic radiation with a wavelength in the range of from 500nm to 1000nm; and/or

(c) in a form suitable for oral, parenteral (including intravenous, subcutaneous, intramuscular, intradermal, intratracheal, intraperitoneal, intratumoral, intraarticular, intraabdominal, intracranial and epidural), transdermal, airway (aerosol), rectal, vaginal or topical (including buccal, mucosal and sublingual) administration; and/or

(d) in a form suitable for oral or parenteral administration.

28. Use of a compound or complex according to any one of claims 1-23, 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 (preferably severe acute respiratory syndrome coronavirus 2 (SARS-

CoV-2)), Asian (chicken) flu virus, Dengue 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.

29. Use of a compound or complex according to any one of claims 1-23, in the manufacture of a phototherapeutic agent for use in photodynamic therapy or cytoluminescent therapy.

30. The use according to claim 29, 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 (preferably severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)), Asian (chicken) flu virus, Dengue 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.

31. The use according to any one of claims 28-30, 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.

32. The use according to any one of claims 28-31, wherein the medicament or the phototherapeutic agent is for the treatment of a benign or malignant tumour.

33. The use according to any one of claims 28-32, 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, 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.

34. Use of a compound or complex according to any one of claims 1-23, in the manufacture of a photodiagnostic agent for use in photodynamic diagnosis.

35. The use according to any one of claims 28-34, wherein the medicament, the phototherapeutic agent or the photodiagnostic agent is adapted for administration prior to administration of irradiation.

36. The use according to claim 35, wherein the irradiation is electromagnetic radiation with a wavelength in the range of from 500nm to 1000nm.

37. A pharmaceutical combination or kit comprising:

(a) a compound or complex according to any one of claims 1-23; and

(b) an immune checkpoint inhibitor.

38. The pharmaceutical combination or kit according to claim 37, wherein the immune checkpoint inhibitor is selected from Pembrolizumab, Nivolumab, Cemiplimab, Atezolizumab, Avelumab, Durvalumab or Ipilimumab.