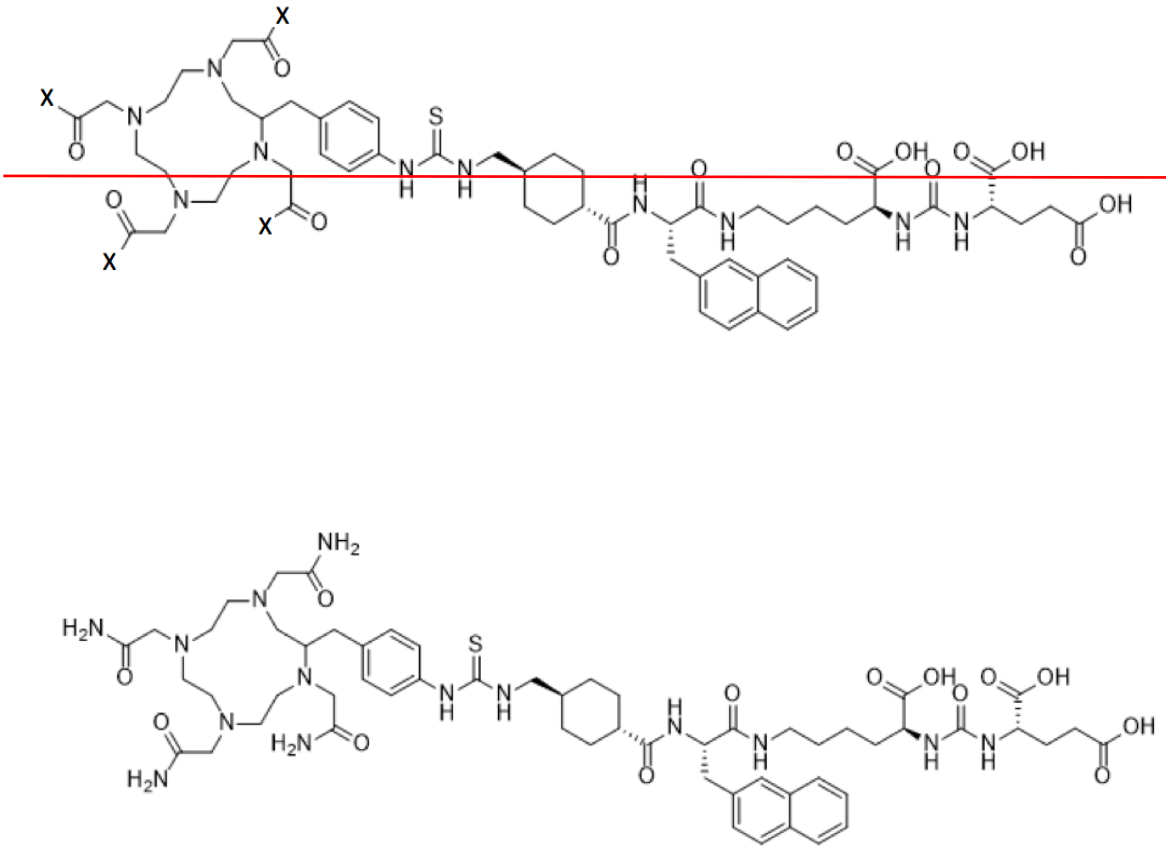
CLAIMS

1. A compound comprising a PSMA unit and chelating unit, wherein the PSMA unit is carbon-backbone linked to the chelating unit, and wherein the compound is ~~of the formula~~:



p-SCN-Bn-TCMC-PSMA ligand 1

2. A complex comprising a compound according to claim 1 complexed with a radionuclide selected from the group consisting of ^{212}Pb, ^{212}Bi, ^{213}Bi, ^{225}Ac or ^{227}Th.

3. The complex according to claim 2, wherein the compound according to claim 2 (p-SCN-Bn-TCMC-PSMA ligand 1) is complexed with ^{212}Pb.

4. A pharmaceutical composition comprising the compound according to claim 1, or the complex according to any one of claims 2-3, and a diluent, carrier, surfactant, and/or excipient.

5. The pharmaceutical composition according to claim 4, further comprising ^{224}Ra.

6. The pharmaceutical composition according to claim 5, wherein the amount of ^{224}Ra and ^{212}Pb is in radioactive equilibrium.

7. The pharmaceutical composition according to any of claims 5-6, wherein the activity ratio (MBq) between ^{212}Pb to ^{224}Ra is between 0.5 and 2, such as 0.8 – 1.5, or such as 0.8 – 1.3, or preferably such as 0.9 – 1.15.

8. The pharmaceutical composition according to any of the claims 4-7, wherein composition is dosaged with a radioactivity of 100 kBq to 100 MBq per dose.

9. The pharmaceutical composition according to any of claims 4-8 for use as a medicament.

10. Use of the pharmaceutical composition according to any of claims 4-8 in the manufacture of a medicament for the treatment of PSMA-expressing disease including soft tissue- and skeletal disease.

11. The use according to claim 10, wherein the skeletal disease is selected from the group consisting of skeletal metastases from cancers to the breast, prostate, kidneys, lung, bone, or multiple myeloma.

12. The use according to any of claims 9-11, wherein the medicament is to be administered at a dose in the range 50-150 kBq per kg of bodyweight.

13. A kit comprising:
- a first vial comprising a radiopharmaceutical composition according to any one of claims 4-8, and
- a second vial comprising a neutralizing solution to adjust pH and/or isotonicity of the radiopharmaceutical composition prior to administration to a patient.

14. A kit comprising:
- a first vial comprising a solution comprising ^{224}Ra, ^{212}Pb and/or ^{227}Th;
- a second vial comprising a compound according to claim 1.