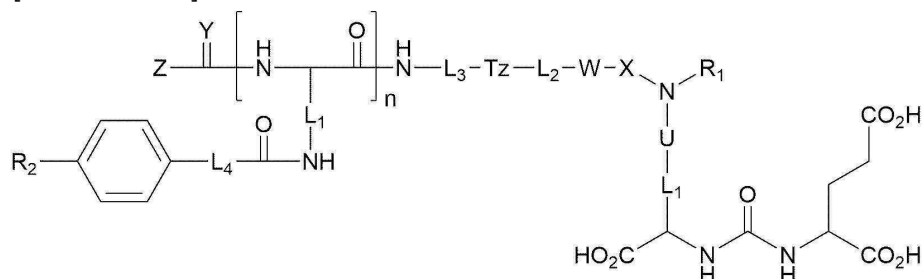


WHAT IS CLAIMED IS:

1. A compound represented by formula 1, a stereoisomer thereof, a hydrate thereof, or a pharmaceutically acceptable salt thereof:

[Formula 1]



In formula 1,

L_1 is $-(CH_2)_a-$, wherein a is an integer of 1 ~ 8;

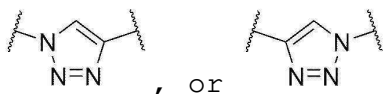
U is a bond, or $-C(O)-$;

R_1 is $-L_5-CO_2H$, wherein L_5 is $-(CH_2)_b-$, wherein b is an integer of 1 ~ 6;

X is a bond, or $-C(O)-$;

W is a bond, or $-NA_1-$, A_1 is hydrogen, or $-(CH_2)_c$ -pyridyl, wherein c is an integer of 0 ~ 3;

L_2 is a bond, or $-(CH_2)_d-$, wherein d is an integer of 1 ~ 8;



Tz is a bond, $N=N$, or $N=N$;

L_3 is C_{1-12} straight or branched alkylene, wherein one or more carbon atoms in alkylene can be replaced by oxygen atoms;

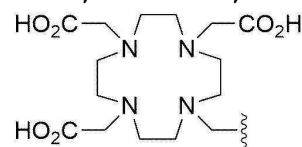
L_4 is $-(CH_2)_e-$, wherein e is an integer of 1 ~ 6;

n is an integer of 0 ~ 1;

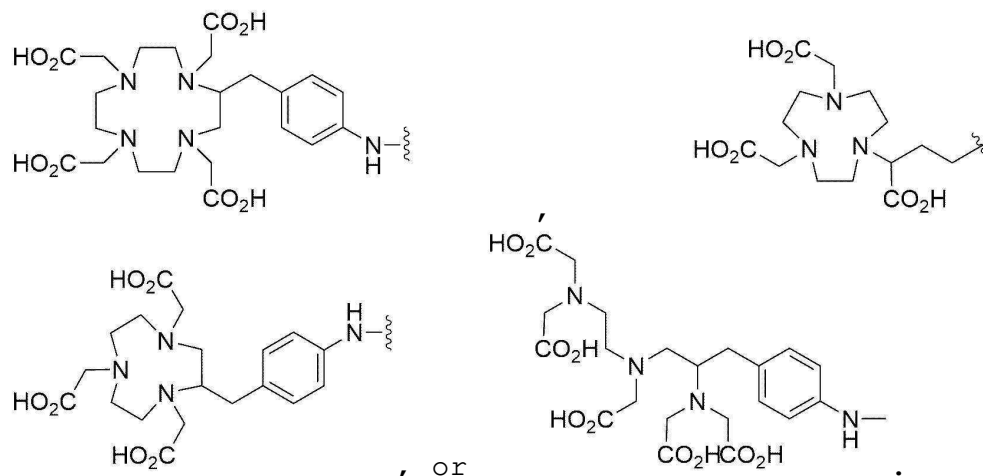
R_2 is hydrogen, C_{1-5} straight or branched alkyl, or halogen;

Y is oxygen;

Z is a chelator including a radioactive metal, wherein the radioactive metal is Ga-68, Cu-64, Cu-67, Y-90, Sc-47, In-111, Sn-117m, Lu-177, Bi-212, Bi-213, Pb-212, Ra-223, or Ac-



225, and the chelator is



2. The compound, the stereoisomer thereof, the hydrate thereof, or the pharmaceutically acceptable salt thereof according to claim 1, wherein:

L_1 is $-(CH_2)_a-$, wherein a is an integer of 1 ~ 6;

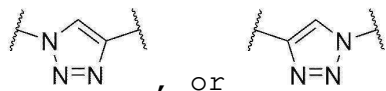
U is a bond, or $-C(O)-$;

R_1 is $-L_5-CO_2H$, wherein L_5 is $-(CH_2)_b-$, wherein b is an integer of 1 ~ 4;

X is a bond, or $-C(O)-$;

W is a bond, or $-NA_1-$, A_1 is hydrogen, or $-(CH_2)_c$ -pyridyl, wherein c is an integer of 0 ~ 1;

L_2 is a bond, or $-(CH_2)_d-$, wherein d is an integer of 1 ~ 6;



Tz is a bond, , or ;

L_3 is C_{1-10} straight or branched alkylene, wherein one or more carbon atoms in alkylene can be replaced by oxygen atoms;

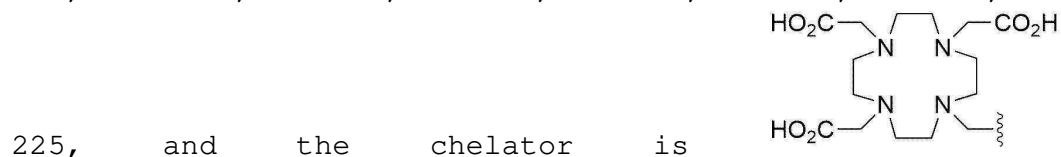
L_4 is $-(CH_2)_e-$, wherein e is an integer of 2 ~ 4;

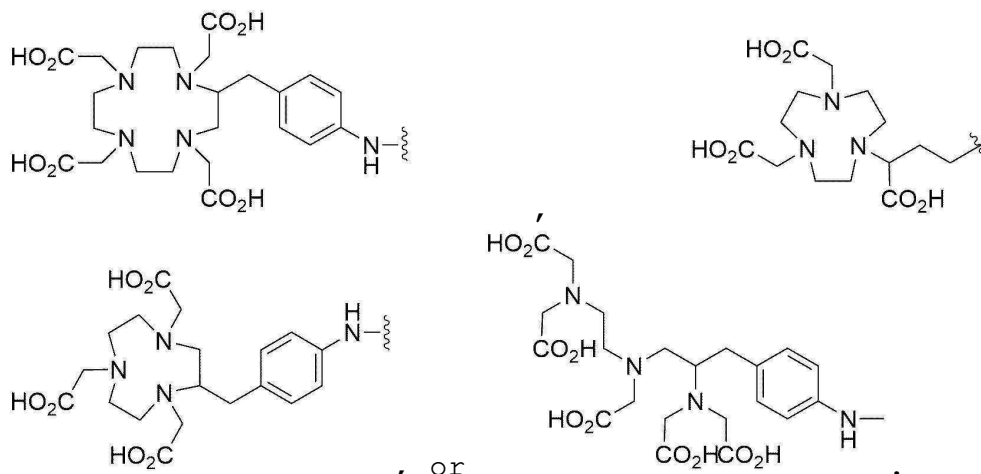
n is an integer of 0 ~ 1;

R_2 is hydrogen, C_{1-3} straight or branched alkyl, or halogen;

Y is oxygen;

Z is a chelator including a radioactive metal, wherein the radioactive metal is Ga-68, Cu-64, Cu-67, Y-90, Sc-47, In-111, Sn-117m, Lu-177, Bi-212, Bi-213, Pb-212, Ra-223, or Ac-





3. The compound, the stereoisomer thereof, the hydrate thereof, or the pharmaceutically acceptable salt thereof according to claim 1, wherein:

L_1 is $-(CH_2)_a-$, wherein a is an integer of 2 ~ 4;

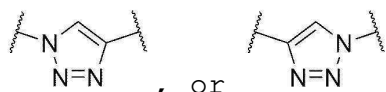
U is a bond, or $-C(O)-$;

R_1 is $-L_5-CO_2H$, wherein L_5 is $-(CH_2)_b-$, wherein b is an integer of 1 ~ 2;

X is a bond, or $-C(O)-$;

W is a bond, or $-NA_1-$, wherein A_1 is hydrogen or pyridyl;

L_2 is a bond, or $-(CH_2)_d-$, wherein d is an integer of 1 ~ 2;



Tz is a bond, $-N=N-$, or $-N=N-$;

L_3 is C_{1-8} straight alkylene, wherein one or more carbon atoms in alkylene can be replaced by oxygen atoms;

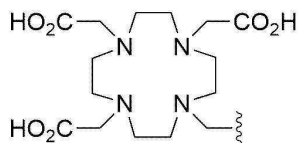
L_4 is $-(CH_2)_3-$;

n is an integer of 0 ~ 1;

R_2 is hydrogen, methyl or halogen;

Y is oxygen;

Z is a chelator including a radioactive metal, wherein the radioactive metal is Ga-68, Cu-64, or Lu-177, and the

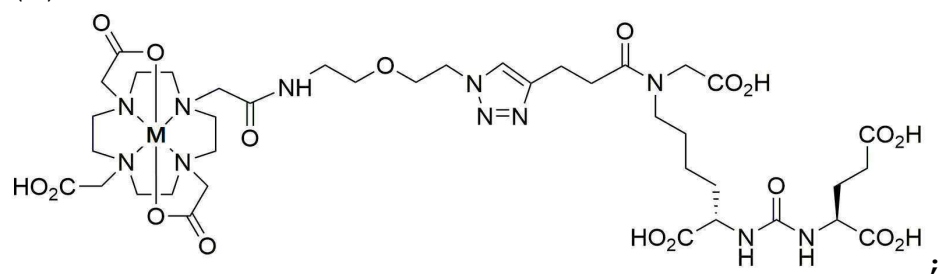


chelator can be

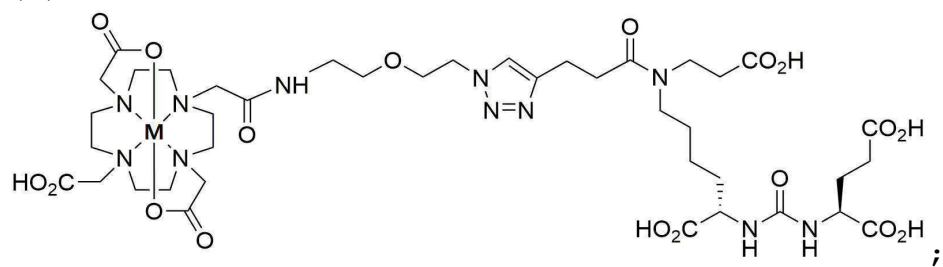
4. The compound, the stereoisomer thereof, the hydrate thereof, or the pharmaceutically acceptable salt thereof according to claim 1, wherein the compound represented by formula 1 is selected from the group consisting of the following compounds:

;

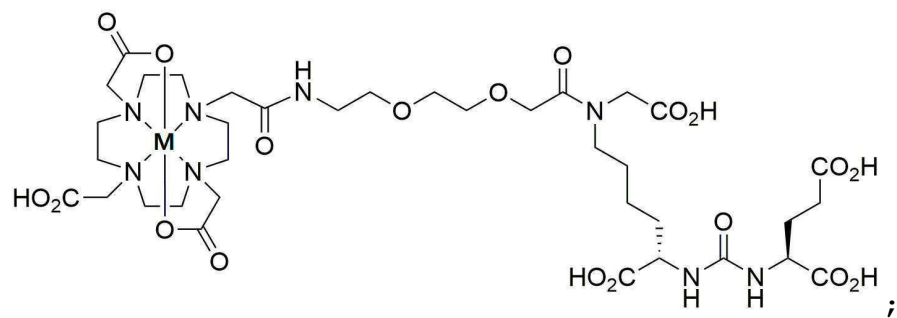
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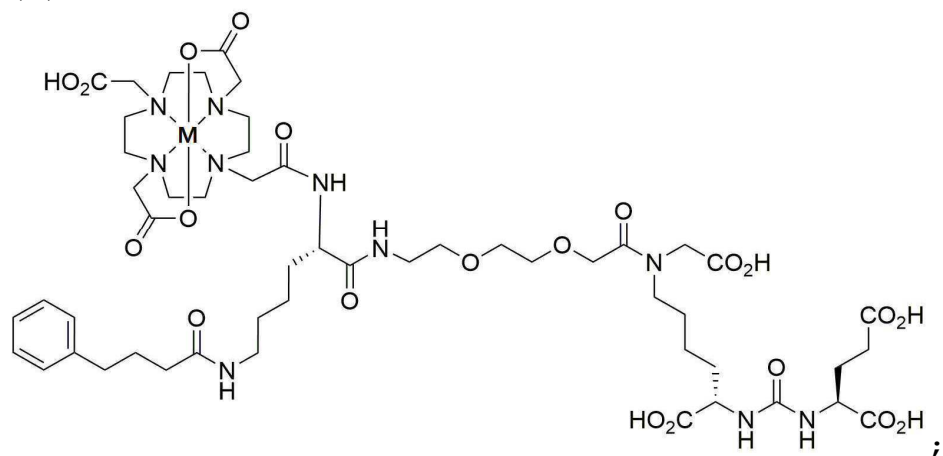
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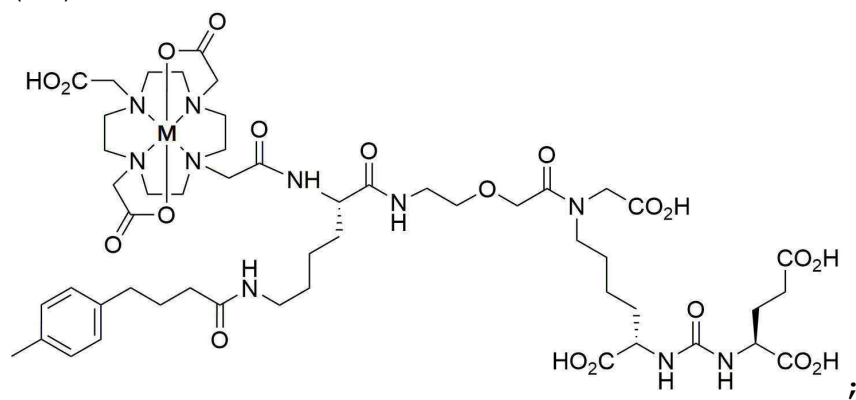
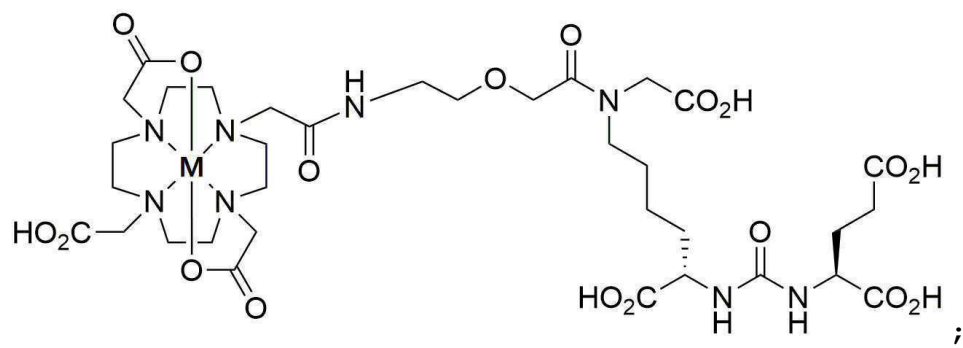
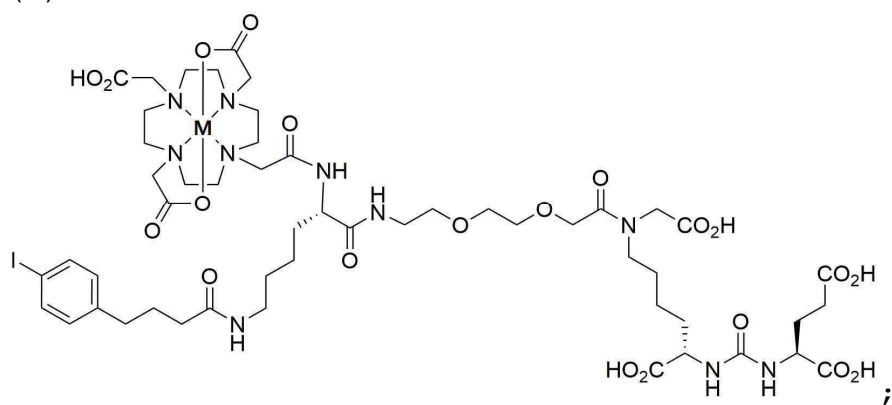
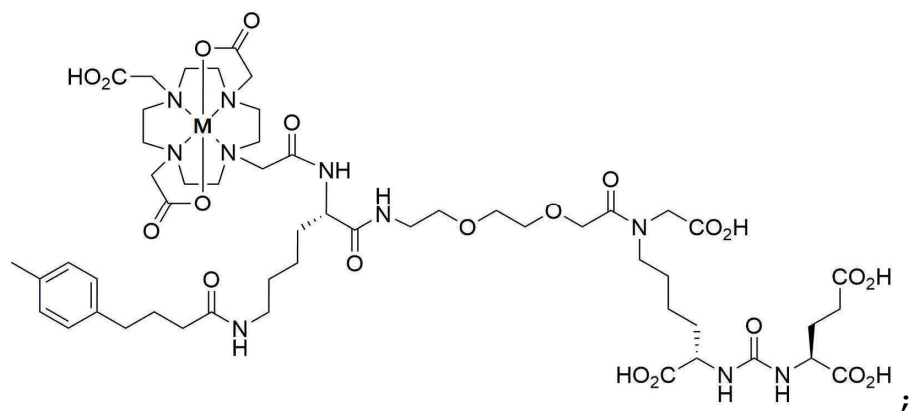
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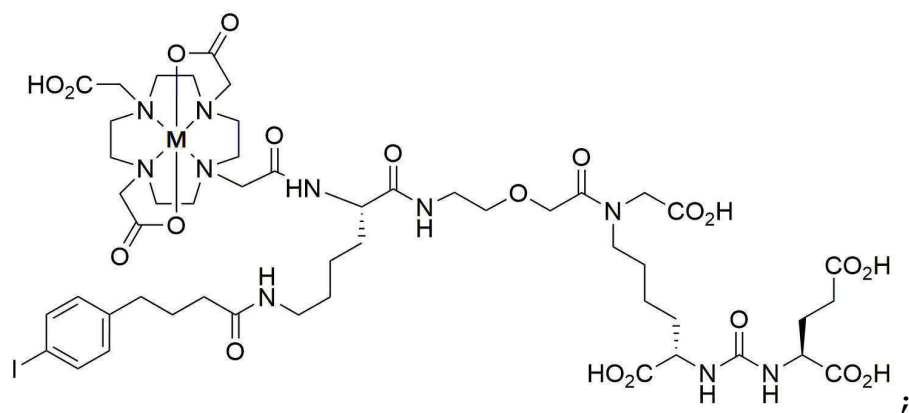


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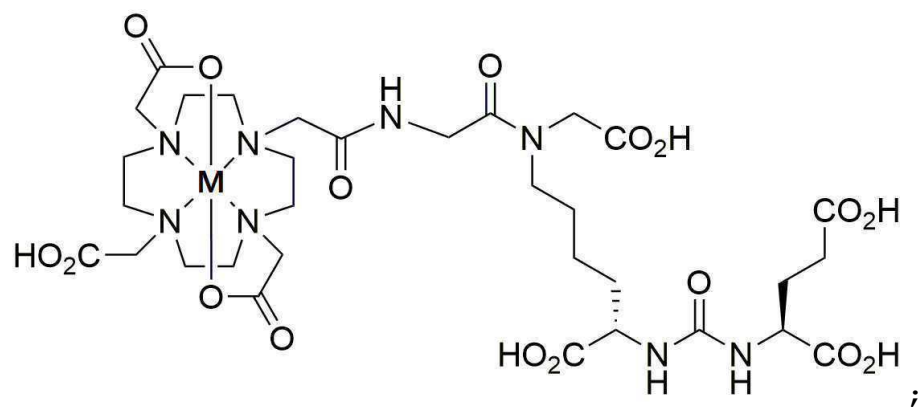


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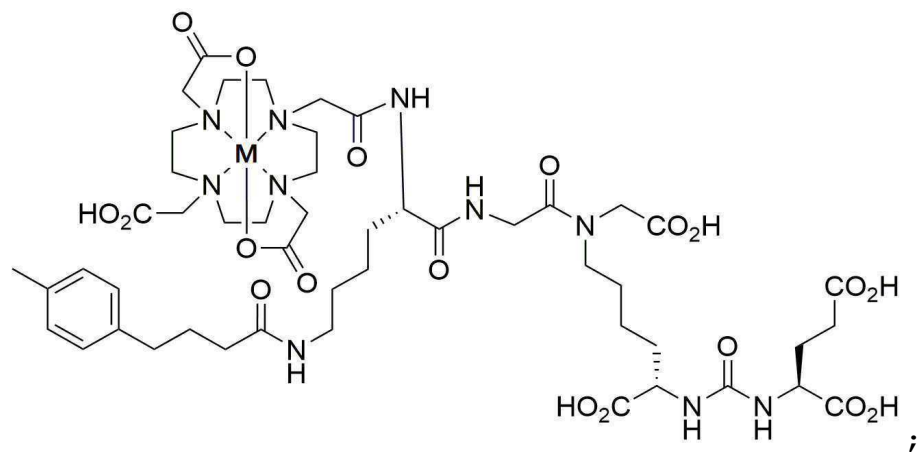




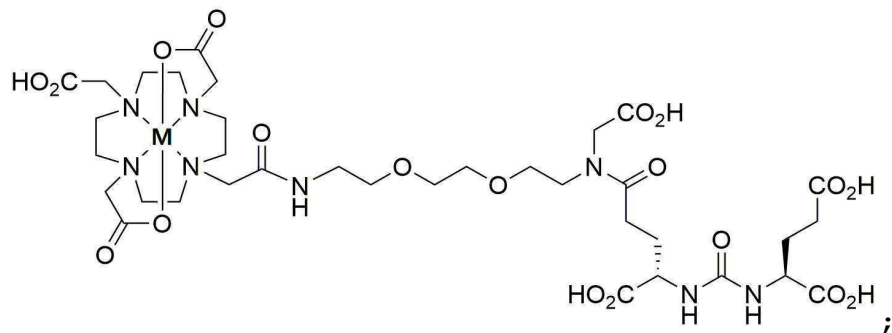
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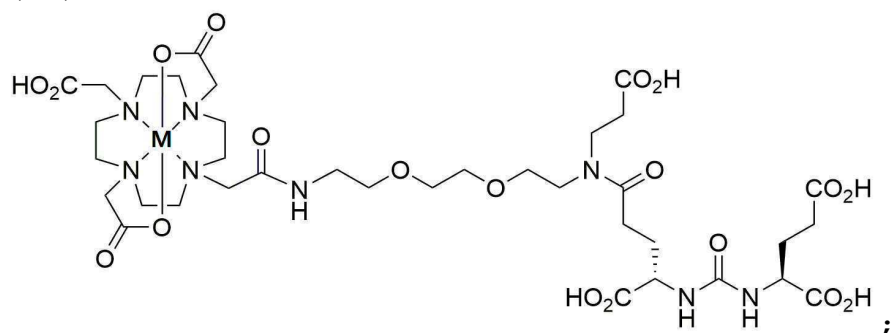
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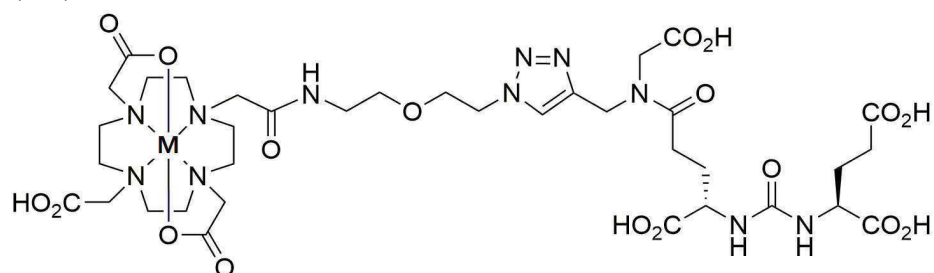
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(15)



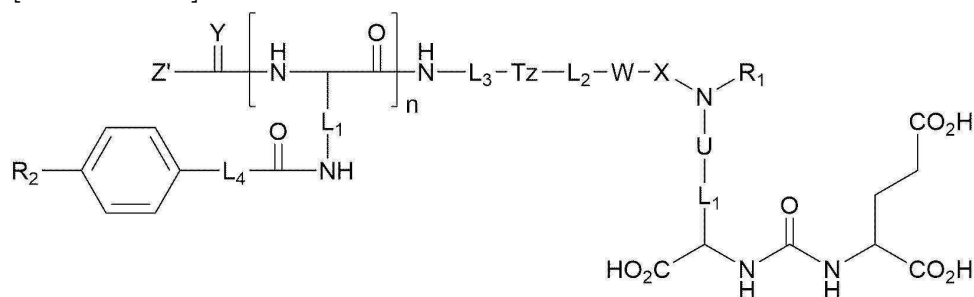
(16)



(In the above formulas, M is a radioactive metal, and the radioactive metal is as defined in claim 1).

5. A compound represented by formula 2, a stereoisomer thereof, a hydrate thereof, or a pharmaceutically acceptable salt thereof:

[Formula 2]



In formula 2,

L_1 is $-(CH_2)_a-$, wherein a is an integer of 1 ~ 8;

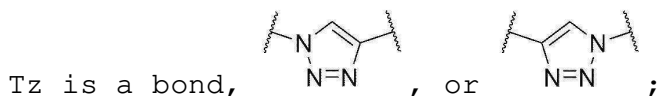
U is a bond, or $-C(O)-$;

R_1 is $-L_5-CO_2H$, wherein L_5 is $-(CH_2)_b-$, wherein b is an integer of 1 ~ 6;

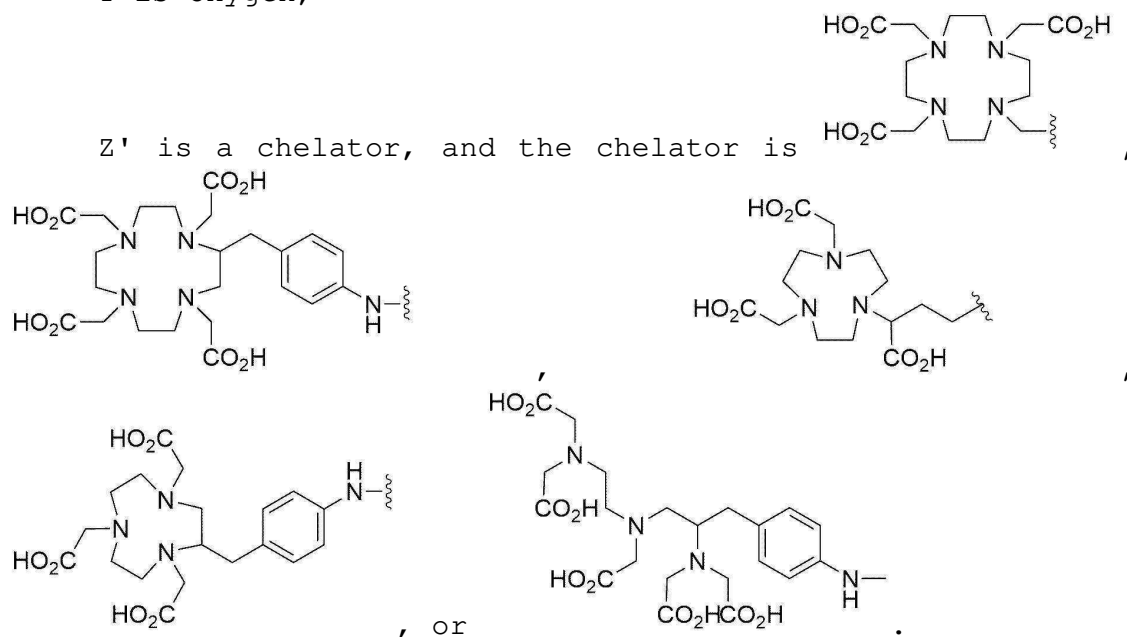
X is a bond, or $-C(O)-$;

W is a bond or $-NA_1-$, and A_1 is hydrogen or $-(CH_2)_c-$ pyridyl, wherein c is an integer of 0 ~ 3;

L_2 is a bond or $-(CH_2)_d-$, wherein d is an integer of 1 ~ 8;

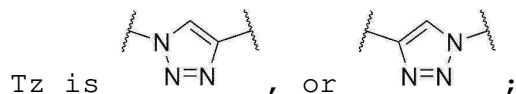


L_3 is C_{1-12} straight or branched alkylene, wherein one or more carbon atoms in alkylene can be replaced by oxygen atoms;
 L_4 is $-(CH_2)_e-$, wherein e is an integer of 1 ~ 6;
 n is an integer of 0 ~ 1;
 R_2 is hydrogen, C_{1-5} straight or branched alkyl, or halogen;
 Y is oxygen;

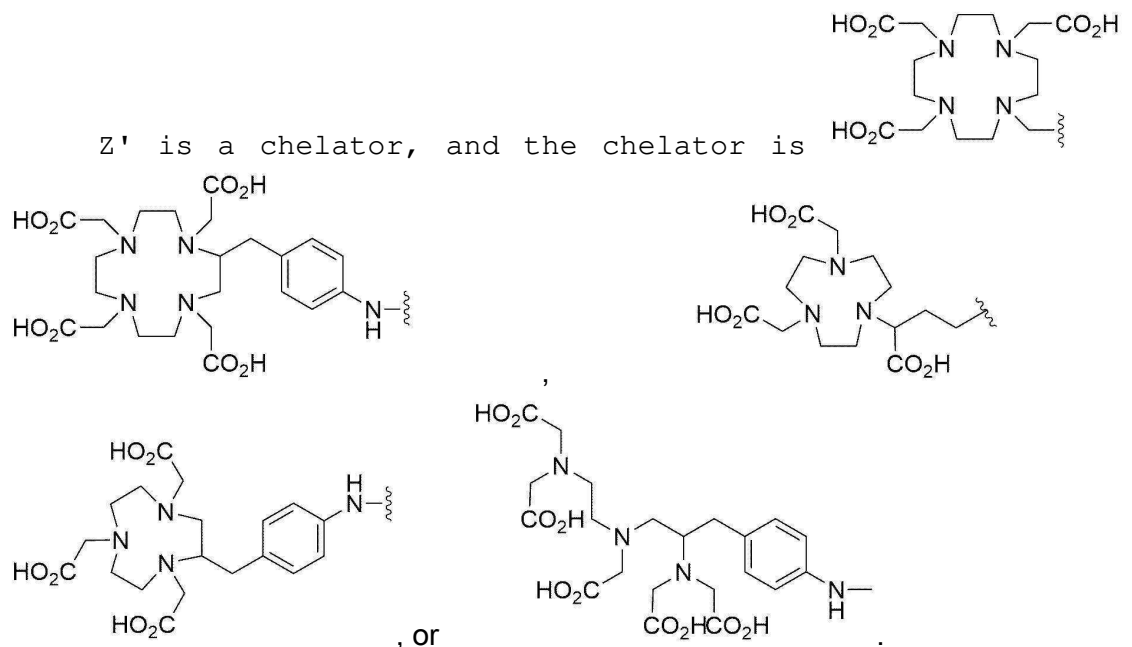


6. The compound, the stereoisomer thereof, the hydrate thereof, or the pharmaceutically acceptable salt thereof according to claim 5, wherein:

L_1 is $-(CH_2)_a-$, wherein a is an integer of 1 ~ 6;
 U is a bond, or $-C(O)-$;
 R_1 is $-L_5-CO_2H$, wherein L_5 is $-(CH_2)_b-$, wherein b is an integer of 1 ~ 4;
 X is a bond, or $-C(O)-$;
 W is a bond or $-NA_1-$, and A_1 is hydrogen or $-(CH_2)_c$ -pyridyl;
 L_2 is a bond or $-(CH_2)_d-$, wherein d is an integer of 1 ~ 6;



L_3 is C_{1-10} straight or branched alkylene, wherein one or more carbon atoms in alkylene can be replaced by oxygen atoms;
 L_4 is $-(CH_2)_3-$;
 n is an integer of 0 ~ 1;
 R_2 is hydrogen, C_{1-3} straight or branched alkyl, or halogen;
 Y is oxygen;



7. The compound, the stereoisomer thereof, the hydrate thereof, or the pharmaceutically acceptable salt thereof according to claim 5, wherein:

L₁ is $-(CH_2)_a-$, wherein a is an integer of 2 ~ 4;

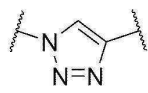
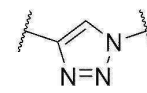
U is a bond, or $-C(O)-$;

R₁ is $-L_5-CO_2H$, wherein L₅ is $-(CH_2)_b-$, wherein b is an integer of 1 ~ 2;

X is a bond, or $-C(O)-$;

W is a bond or $-NA_1-$, and A₁ is hydrogen or pyridyl;

L₂ is a bond or $-(CH_2)_d-$, wherein d is an integer of 1 ~ 2;

Tz is a bond, , or ;

L₃ is C₁₋₈ straight alkylene, wherein one or more carbon atoms in alkylene can be replaced by oxygen atoms;

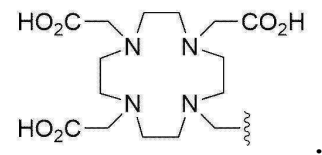
L₄ is $-(CH_2)_3-$;

n is an integer of 0 ~ 1;

R₂ is hydrogen, methyl, or halogen;

Y is oxygen;

Z' is a chelator, and the chelator is



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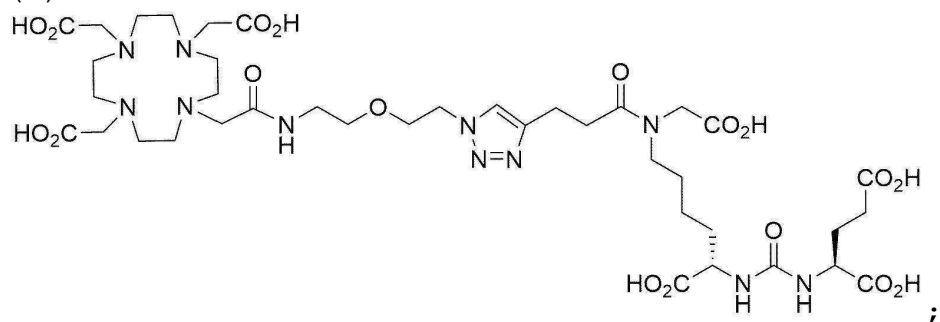
8. The compound, the stereoisomer thereof, the hydrate thereof, or the pharmaceutically acceptable salt thereof according to claim 5, wherein the compound represented by

formula 2 is selected from the group consisting of the following compounds:

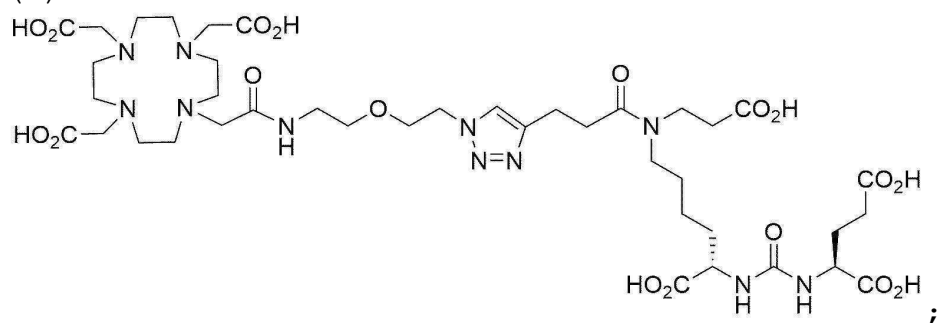
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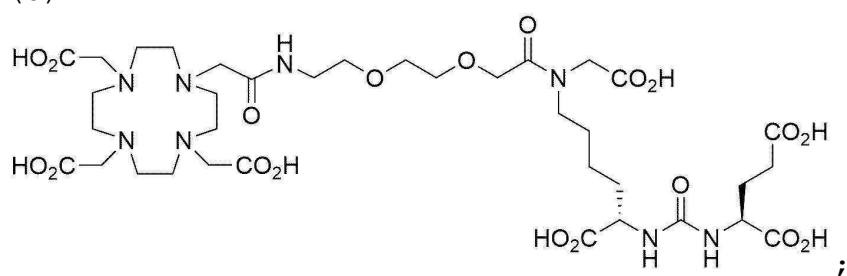
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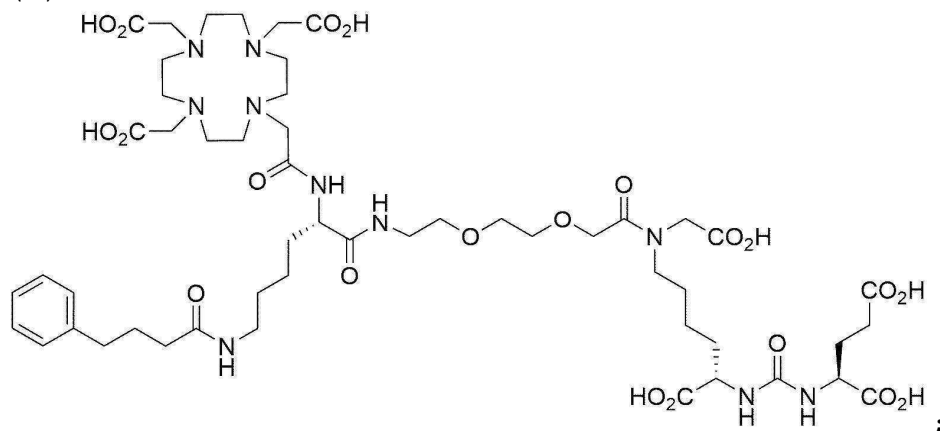
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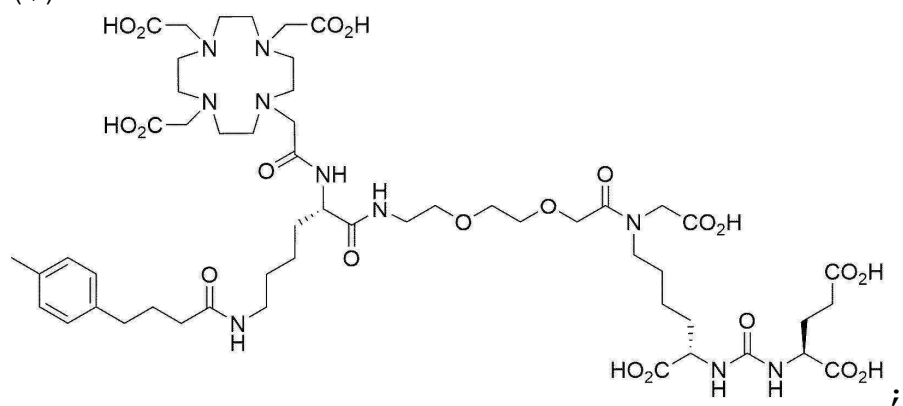
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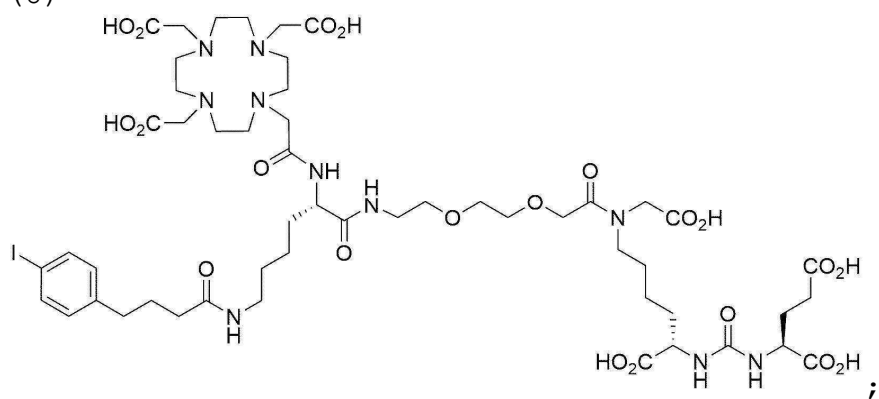
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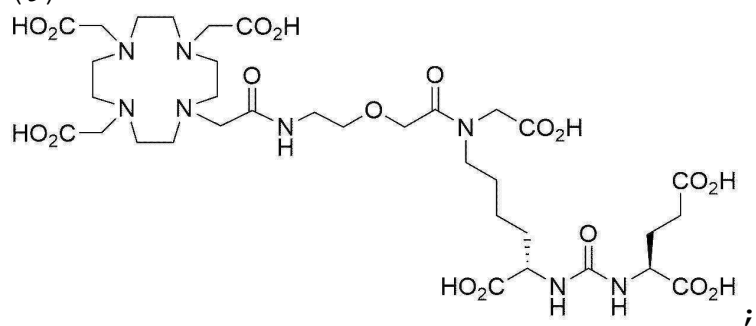
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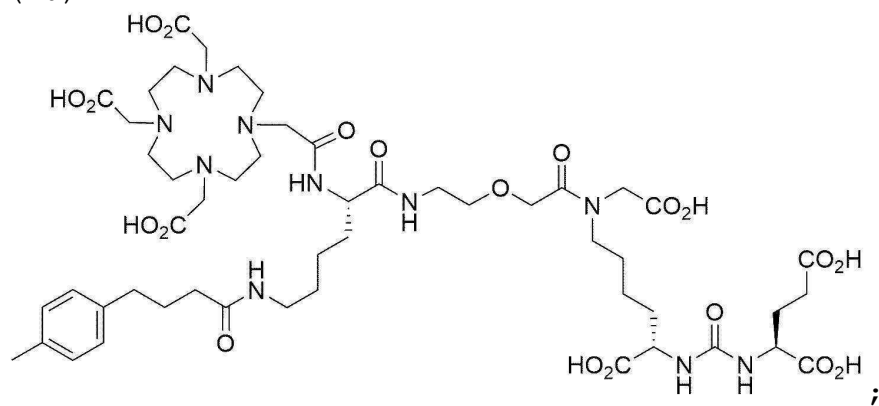
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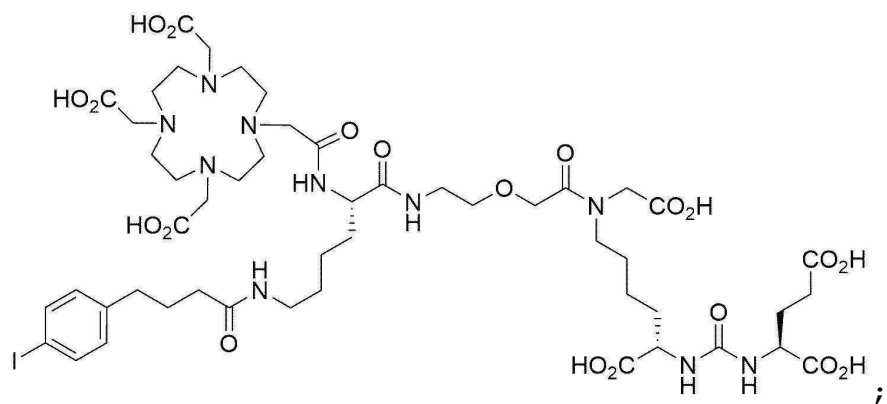
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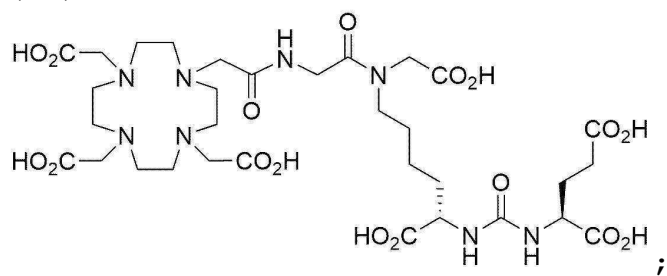
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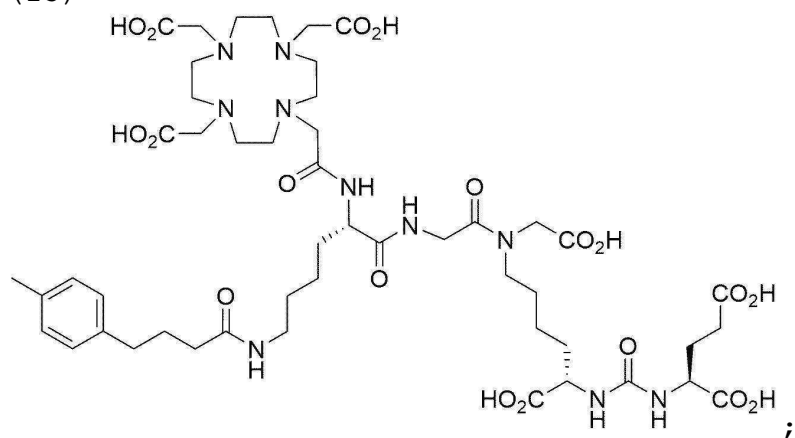
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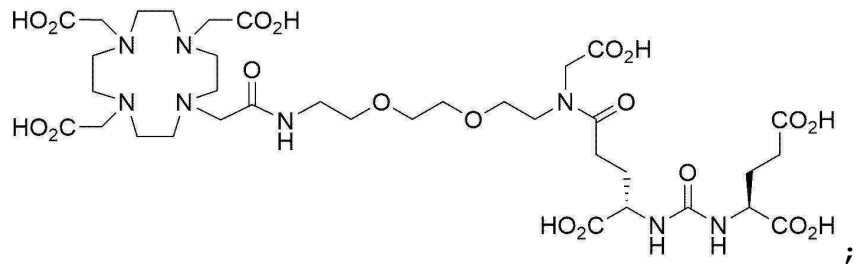
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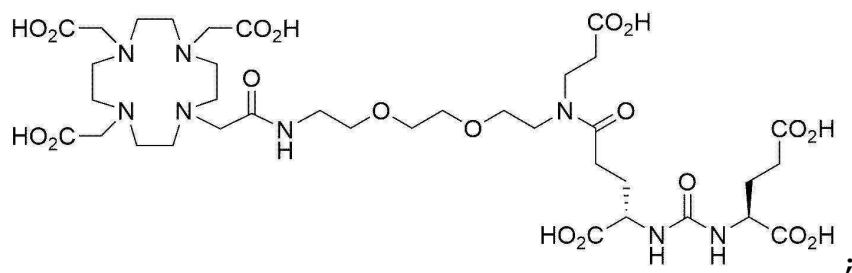
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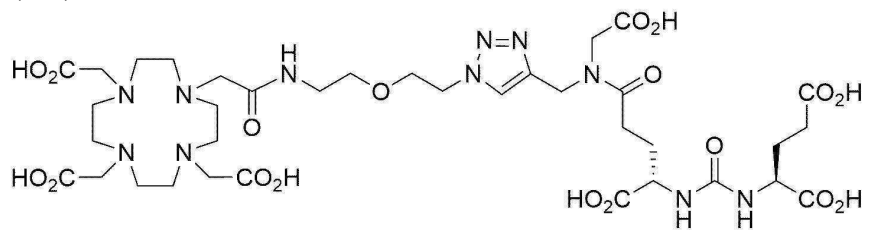
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(15)



(16)



9. A composition for diagnosing prostate cancer comprising the compound, the stereoisomer thereof, the hydrate thereof, or the pharmaceutically acceptable salt thereof of claim 1 as an active ingredient.

10. The composition for diagnosing prostate cancer according to claim 9, wherein the composition diagnoses prostate cancer by selectively binding the compound to PSMA (Prostate-Specific Membrane Antigen) over-expressed in prostate cancer cells.

11. A pharmaceutical composition for preventing or treating prostate cancer comprising the compound, the stereoisomer thereof, the hydrate thereof, or the pharmaceutically acceptable salt thereof of claim 1 as an active ingredient.