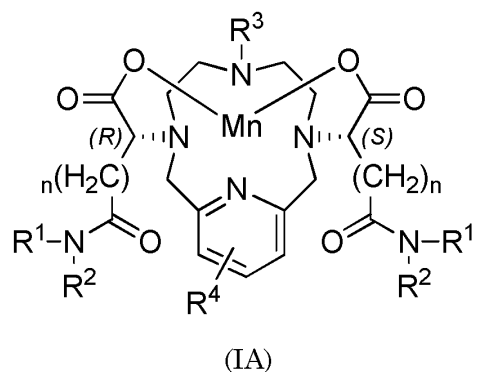


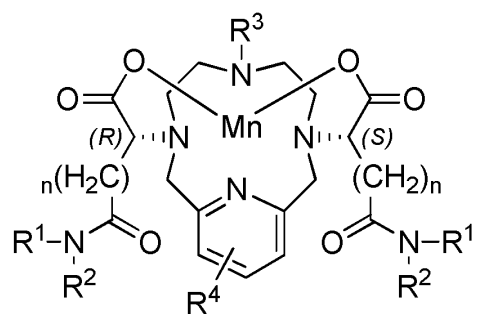
WHAT IS CLAIMED IS:

1. A compound of formula IA:



- 5 or a salt or solvate thereof, wherein:
- each R^1 is independently selected from C_{1-20} hydroxyalkyl, C_{1-6} alkyl, C_{3-6} aryl optionally-substituted with one or more substituents selected from halo and $-C(=O)-NH-C_{1-6}$ hydroxyalkyl, or a carbohydrate moiety;
- each R^2 is independently selected from C_{1-20} hydroxyalkyl, C_{1-6} alkyl or
- 10 hydrogen;
- R^3 is selected from C_{1-3} alkyl or $-(CH_2)_m-C(=O)-NR^5R^6$, wherein m is an integer from 2–5, wherein R^5 and R^6 are independently selected from hydrogen, from C_{1-20} hydroxyalkyl, C_{1-6} alkyl, C_{3-6} aryl optionally-substituted with one or more substituents selected from halo and $-C(=O)-NH-C_{1-6}$ hydroxyalkyl, or a
- 15 carbohydrate moiety;
- R^4 represents 0–3 substituents selected from hydroxy, C_{1-6} alkyl and C_{1-6} hydroxyalkyl; and,
- each n is an integer from 0–4.
- 20 2. The compound of claim 1, where the compound comprises at least two hydroxy groups.
3. The compound of claim 1, wherein the compound is of Formula IA.

4. The compound of claim 1, wherein the compound is of Formula IA,
each R^1 is C_{1-20} hydroxyalkyl;
 R^3 is methyl;
5 R^2 and R^4 are hydrogen; and
 n is 2.
5. The compound of claim 1, wherein each R^1 is C_{1-20} hydroxyalkyl.
- 10 6. The compound of claim 1, wherein R^3 is methyl.
7. The compound of claim 1, wherein R^2 and R^4 are hydrogen.
8. The compound of claim 1, wherein n is 2.
- 15 9. The compound of claim 1, wherein each R^1 is independently C_{3-9} hydroxyalkyl.
10. The compound of claim 1, wherein each R^1 is independently C_{3-6}
20 hydroxyalkyl.
11. A composition comprising a compound of formula IA:



(IA)

or a salt or solvate thereof, and a pharmaceutically acceptable excipient, wherein:

each R^1 is independently selected from C_{1-20} hydroxyalkyl, C_{1-6} alkyl, C_{3-6} aryl optionally-substituted with one or more substituents selected from halo and -
 5 $C(=O)-NH-C_{1-6}$ hydroxyalkyl, or a carbohydrate moiety;

each R^2 is independently selected from C_{1-20} hydroxyalkyl, C_{1-6} alkyl or hydrogen;

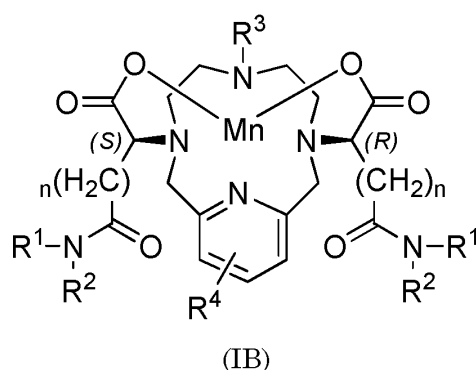
R^3 is selected from C_{1-3} alkyl or $-(CH_2)_m-C(=O)-NR^5R^6$, wherein m is an integer from 2–5, wherein R^5 and R^6 are independently selected from hydrogen,
 10 from C_{1-20} hydroxyalkyl, C_{1-6} alkyl, C_{3-6} aryl optionally-substituted with one or more substituents selected from halo and $-C(=O)-NH-C_{1-6}$ hydroxyalkyl, or a carbohydrate moiety;

R^4 represents 0–3 substituents selected from hydroxy, C_{1-6} alkyl and C_{1-6} hydroxyalkyl; and,

15 each n is an integer from 0–4.

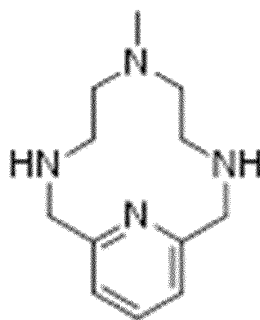
12. The composition of claim 11, where the compound of Formula IA comprises at least two hydroxy groups.

20 13. The composition of claim 11, wherein the compound lacks detectable amounts of the compound of Formula (IB):



or a salt or solvate thereof.

14. The composition of claim 11, wherein the composition further comprises Mn Chelates having (*R,R*) and (*S,S*) stereochemistry.
- 5 15. The composition of claim 11, wherein each R¹ is C₁₋₂₀ hydroxyalkyl.
16. The composition of claim 11, wherein R³ is methyl.
17. The composition of claim 11, wherein R² and R⁴ are hydrogen.
- 10 18. The composition of claim 11, wherein n is 2.
19. The composition of claim 11, wherein each R¹ is independently C₃₋₉ hydroxyalkyl.
- 15 20. The composition of claim 11, wherein each R¹ is independently C₃₋₆ hydroxyalkyl.
21. A method of imaging a patient comprising administering the compound of
20 claim 1 to a patient in need thereof, followed by acquiring an MRI image of the patient.
22. A method of imaging a patient comprising administering the composition of
claim 11 to a patient in need thereof, followed by acquiring an MRI image of the
25 patient.
23. A method of enantioselective synthesis of the compound of Formula (1A) of
claim 1 comprising:
- (a) monoalkylation using a first enantiomer of 5-benzyl 1-*tert*-butyl 2-
30 (methylsulfonyloxy) pentanedioate of a compound of formula (III)



(III);

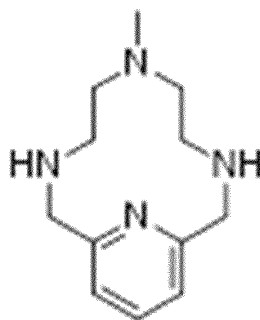
(b) followed by alkylation of the compound from step (a) with a second enantiomer of 5-benzyl 1-*tert*-butyl 2-(methylsulfonyloxy) pentanedioate, the second enantiomer being opposite the first enantiomer;

(c) reacting the product of step (b) with Mn; and

(d) reacting the product of step (c) with an aminoalcohol.

24. A method of enantioselective synthesis of a composition comprising Formula (1A) of claim 11 comprising:

(a) monoalkylation using a first enantiomer of 5-benzyl 1-*tert*-butyl 2-(methylsulfonyloxy) pentanedioate of a compound of formula (III)



(III);

(b) followed by alkylation of the compound from step (a) with a second enantiomer of 5-benzyl 1-*tert*-butyl 2-(methylsulfonyloxy) pentanedioate, the second enantiomer being opposite the first enantiomer;

(c) reacting the product of step (b) with Mn; and

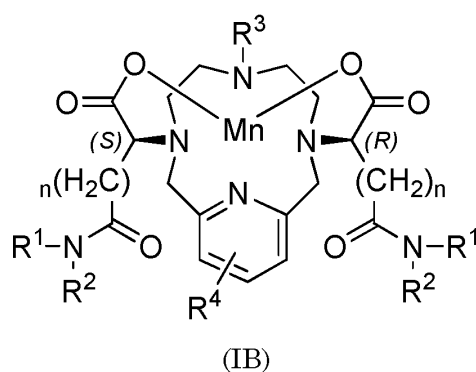
(d) reacting the product of step (c) with an aminoalcohol.

25. The composition of claim 24, wherein the method results in a composition comprising Formula (IA).

5

26. A method of making the composition of claim 11, wherein the method comprises:

heating a composition comprising the compound of Formula (1B):



10

or a salt or solvate thereof;

wherein the heating is for a sufficient time and temperature to convert substantially all of the compound of Formula (1B) into the compound of Formula (1A).

15

27. The method of claim 26, wherein the resulting composition lacks detectable amounts of the compound of Formula (1B).