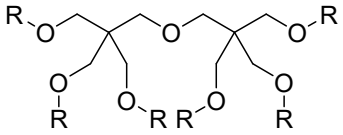
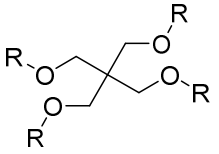
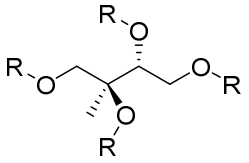
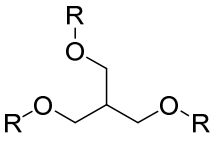
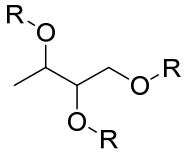
CLAIMS:

1. A compound having the following structure:

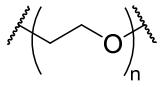
 (Formula Ia),  (Formula Ib),

 (Formula Ic),  (Formula Id), or

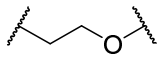
 (Formula Ie),

wherein each R is independently at each occurrence hydrogen or is a substituent comprising:

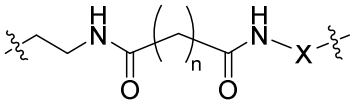
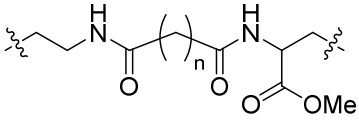
(i) a poly(ethylene glycol) (PEG) group having the following structure:

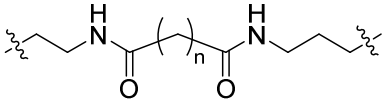
, wherein n is 2 to 500,

or an ethylene glycol group having the following structure:

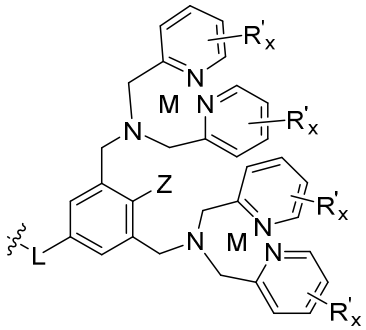
;

(ii) a linker group having the following structure:

 (Formula IIa),  (Formula IIc), or

 (Formula IIe), wherein n is 2, 3, or 4 and X is a spacer group; and

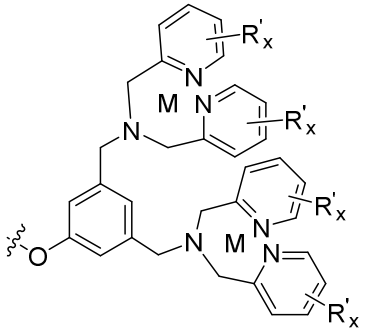
(iii)an end group having the following structure:



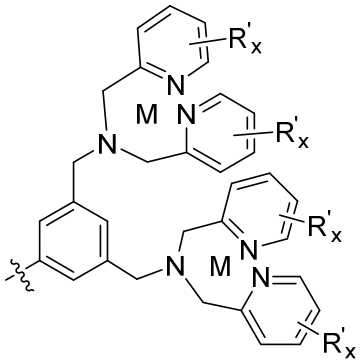
(Formula IIIa),

wherein L is O, -$CH_2$-, or absent, and Z is OH, O, or H, wherein O is chelated to M, R´ is independently at each occurrence chosen from hydrogen, halogens, aliphatic groups, aryl groups, alkoxide groups, amine groups, carboxylate groups, carboxylic acids, ether groups, alcohol groups, alkyne groups, and combinations thereof, and x is 1, 2, 3, or 4, and at least one R group is not H.

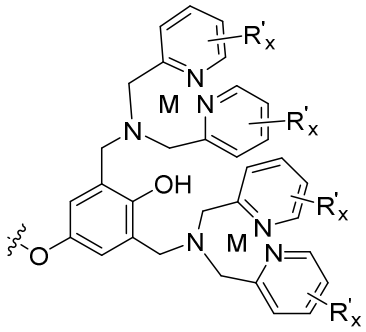
2. The compound of claim 1, wherein the end group has the following structure:



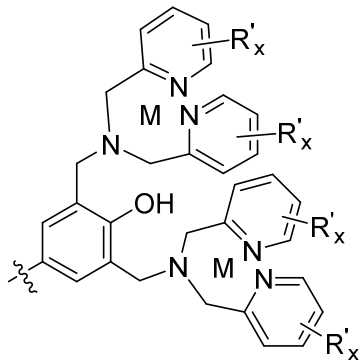
(Formula IIIb),



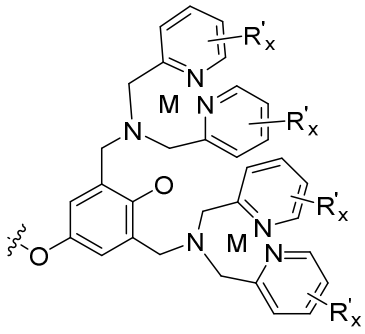
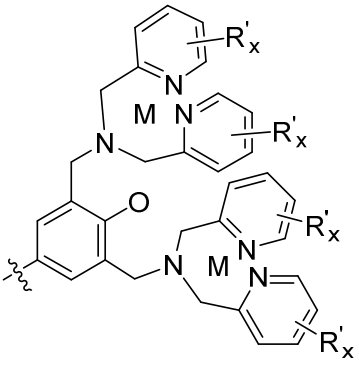
(Formula IIIc),



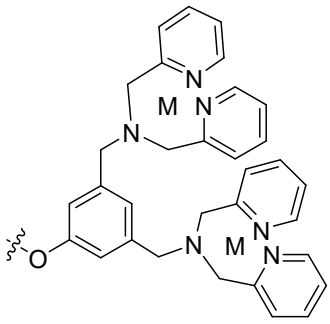
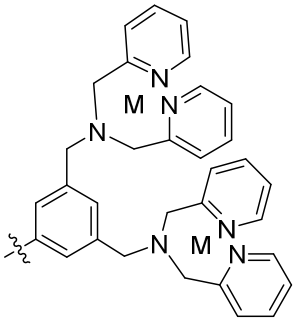
(Formula IIId),

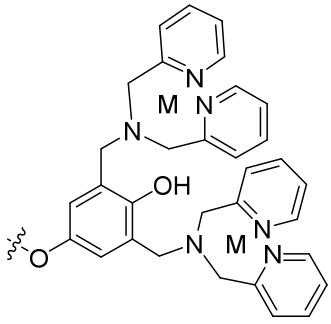
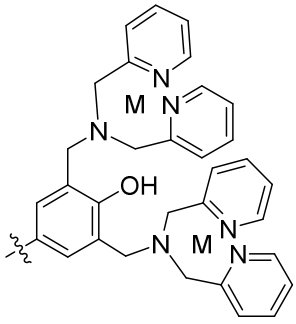


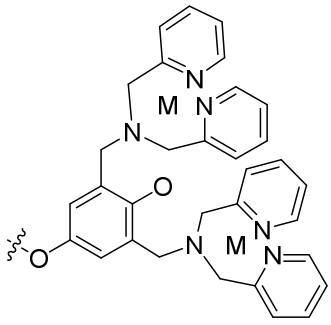
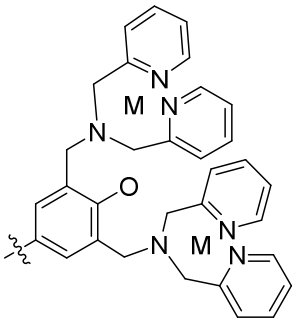
(Formula IIIe),

 (Formula IIIf), or  (Formula IIIg).

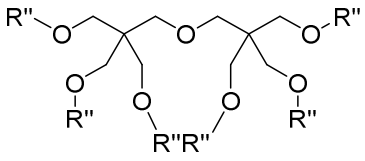
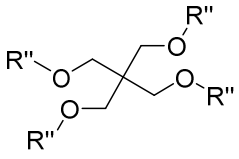
3. The compound of claim 1, wherein the end group has the following structure:

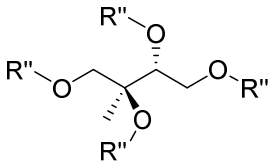
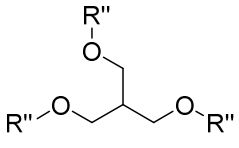
 (Formula IVa),  (Formula IVb),

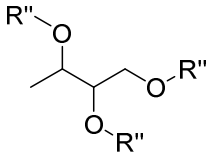
 (Formula IVc),  (Formula IVd),

 (Formula IVe), or  (Formula IVf).

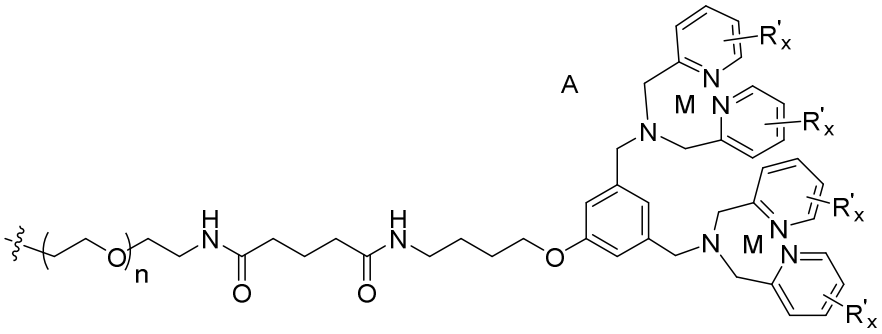
4. The compound of claim 1, wherein the compound has the following structure:

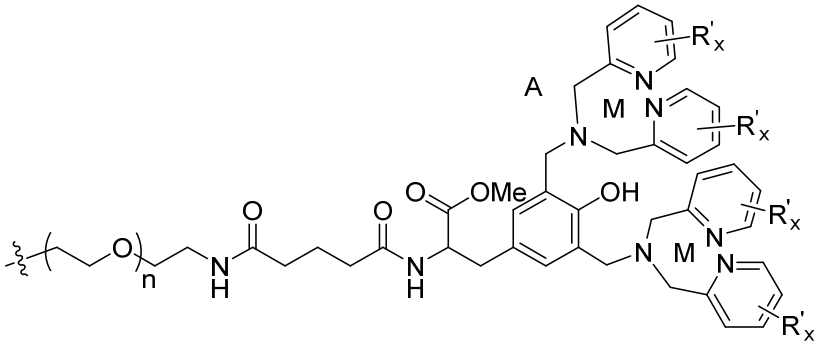

(Formula Va),

(Formula Vb),

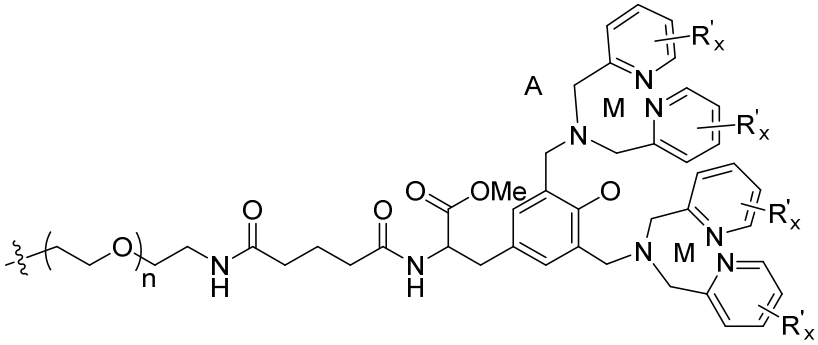

(Formula Vc),

(Formula Vd), or


(Formula Ve),

wherein R″ is independently at each occurrence H or

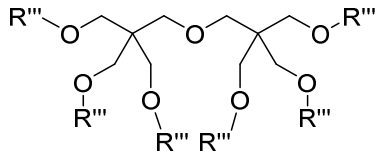

(Formula VIa),


(Formula VIb), or


(Formula VIc),

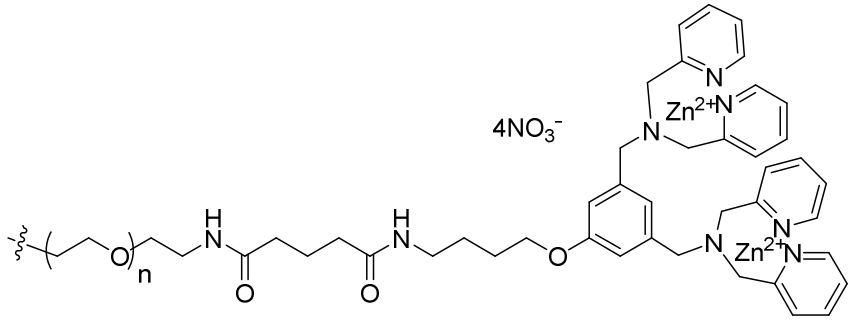
wherein M is a divalent cation, R´ is independently at each occurrence chosen from halogens, aliphatic groups, aryl groups, alkoxide groups, amine groups, carboxylate groups, carboxylic acids, ether groups, alcohol groups, alkyne groups, and combinations thereof, A is one or more counter anions, x is 1, 2, 3, or 4, and n is 1–500, wherein at least one R″ group is not H.

5. The compound of claim 4, wherein the compound has the following structure:

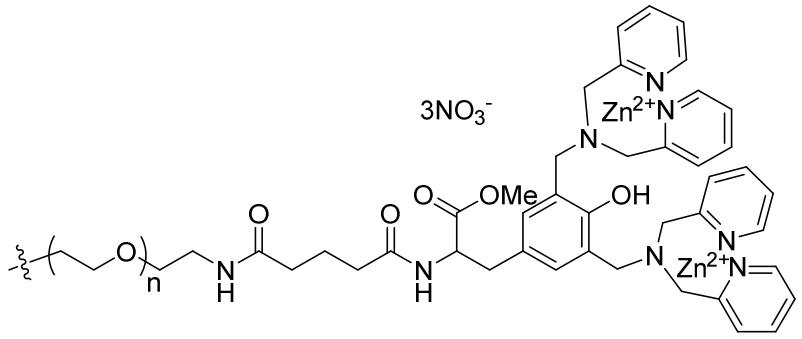


(Formula VII),

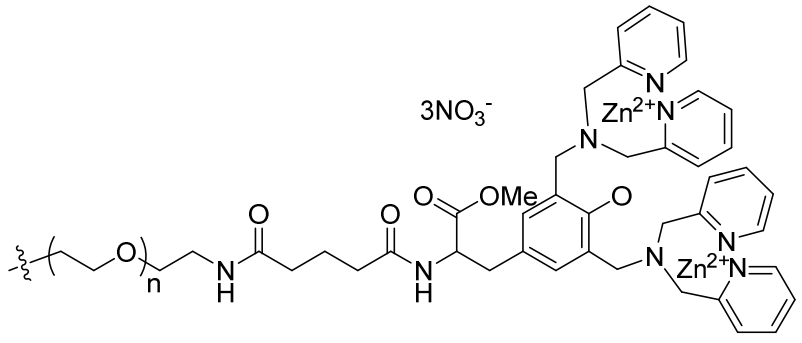
wherein R‴ is independently at each occurrence H or



(Formula VIIIa),



(Formula VIIIb), or



(Formula VIIIc),

n is 1–500, and at least one R‴ is not H.

6. A composition comprising a compound of claim 1 and one or more pharmaceutically acceptable carriers.

7. The composition of claim 6, further comprising an anti-PD1 antibody, an anti-CTLA-4 antibody, an anti-LAG3 antibody, an anti-TIM3 antibody, or a combination thereof.

8. The composition of claim 7, wherein the anti-PD1 antibody is chosen from nivolumab, pembrolizumab, durvalumab, camrelizumab, cemiplimab, sintilimab, toripalimab, and combinations thereof.

9. A liposome composition, wherein the liposomes have incorporated therein a compound of claim 1.

10. The liposome composition of claim 9, wherein the liposome has a monolayer or bilayer and the monolayer or bilayer comprise phosphatidylcholine ("PC") and/or phosphatidylglycerol ("PG") and, optionally, cholesterol.

11. A compound of claim 1 or a composition comprising a compound of claim 1 for use in the treatment of cancer, wherein the compound or composition is to be administered to an individual, preferably a human or non-human mammal, and wherein said cancer is preferably a solid tumor, leukemia, lymphoma, or a combination thereof.

12. The compound or composition for use according to claim 11, wherein said cancer is a solid tumor, said tumor is associated with melanoma.

13. The composition for use of claim 11, wherein the composition is a liposomal composition.