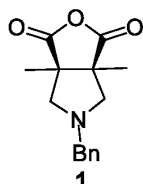
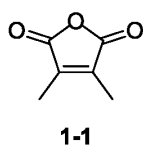


CLAIMS

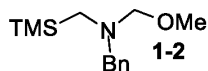
1. A method for preparing a compound of formula 1:



comprising reacting a compound of formula 1-1:



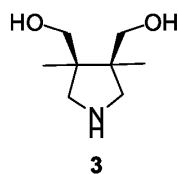
with a compound of formula 1-2:



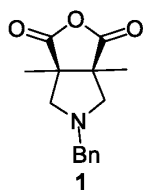
at a temperature of 40 °C or greater.

2. The method of claim 1 wherein the compound of formula 1-1 is reacted with the compound of formula 1-2 in a solvent that comprises tetrahydrofuran.
3. The method of claim 1 or 2 wherein the compound of formula 1-1 is reacted with the compound of formula 1-2 in a solvent that comprises tetrahydrofuran at a temperature of 60 °C or greater.

4. A method for preparing a crystalline form of compound 3:

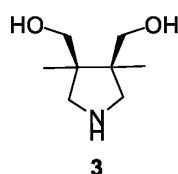


comprising converting a compound of formula 1:

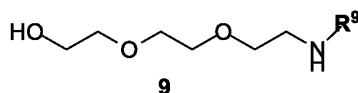


to the crystalline form of compound 3 without using column chromatography during the conversion.

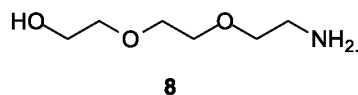
5. A crystalline form of compound 3:



6. A method for preparing a compound of formula 9:



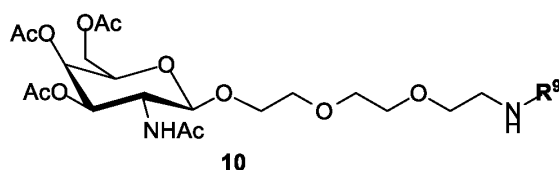
wherein R^9 is an optionally substituted benzyloxycarbonyl group, comprising converting a compound of formula 8:



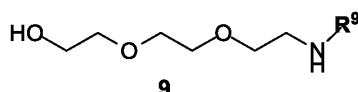
or a salt thereof to the compound of formula 9.

7. The method of claim 6 wherein R^9 is benzyloxycarbonyl or nitrobenzyloxycarbonyl.
8. The method of claim 6 wherein the compound of formula 8 is converted to the compound of formula 9 by treating the compound of formula 8 with benzyloxycarbonyl chloride in a suitable solvent in the presence of a suitable base.

9. A method for preparing a compound of formula 10:

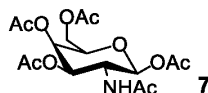


wherein R^9 is an optionally substituted benzyloxycarbonyl group, comprising converting a corresponding compound of formula 9:



to the compound of formula 10.

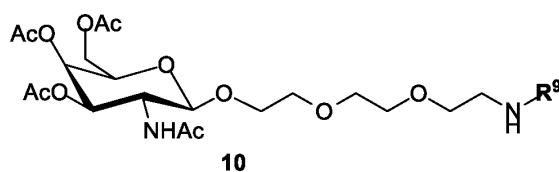
10. The method of claim 9 wherein the compound of formula 9 is converted to the compound of formula 10 by treatment with a compound of formula 7:



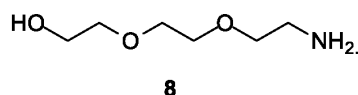
in the presence of a suitable catalyst and a suitable solvent.

11. The method of claim 10 wherein the catalyst is $Sc(OTf)_3$ and wherein the suitable solvent comprises dichloroethane.

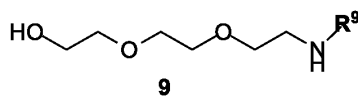
12. A method for preparing a compound of formula 10:



wherein R^9 is an optionally substituted benzyloxycarbonyl group, comprising converting a compound of formula 8:

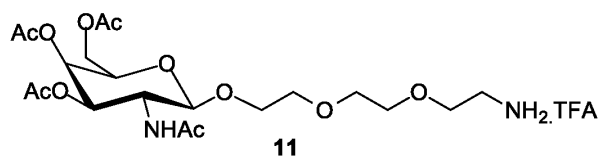


or a salt thereof to a corresponding compound of formula 9;

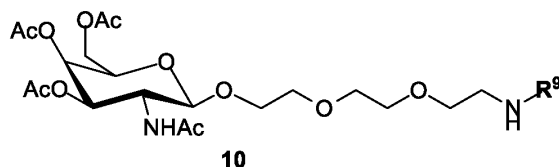


and subsequently converting the corresponding compound of formula 9 to the compound of formula 10, without purifying the compound of formula 9 by chromatography.

13. A method for preparing a salt of formula 11:



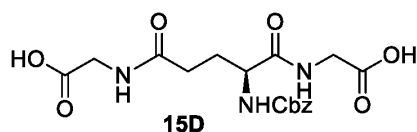
comprising treating a compound of formula 10:



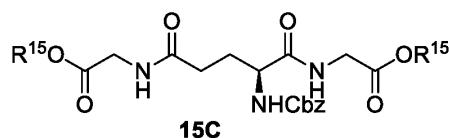
wherein R^9 is an optionally substituted benzyloxycarbonyl group, with hydrogen and trifluoroacetic acid in the presence of a suitable catalyst and in the presence of a suitable solvent.

14. The method of claim 13 wherein the suitable catalyst comprises palladium on carbon and wherein the suitable solvent comprises tetrahydrofuran.

15. A method for preparing a compound of formula 15D:

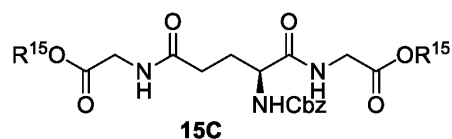


or a salt thereof, comprising converting a compound of formula 15C:

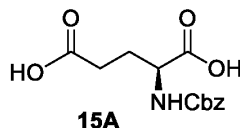


wherein each R^{15} is a (C_1-C_6) alkyl, to the compound of formula 15D or the salt thereof.

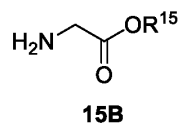
16. A method for preparing a compound of formula 15C:



wherein each R¹⁵ is a (C₁-C₆)alkyl, comprising reacting a compound of formula 15A:

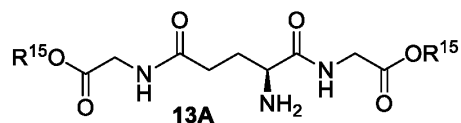


or a salt thereof, with a corresponding compound of formula 15B:

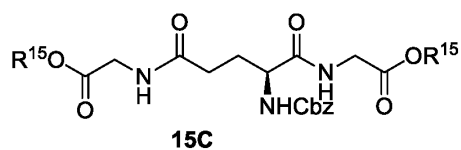


or a salt thereof, to provide the compound of formula 15C.

17. A method for preparing a compound of formula 13A:

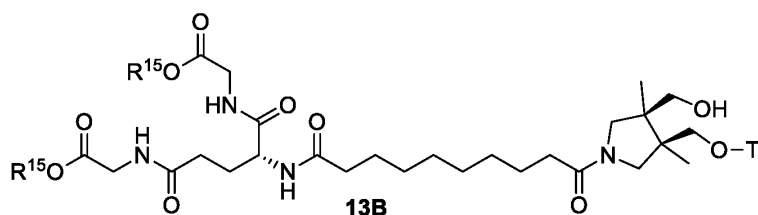


wherein each R¹⁵ is a (C₁-C₆)alkyl, comprising converting a corresponding compound of formula 15C:

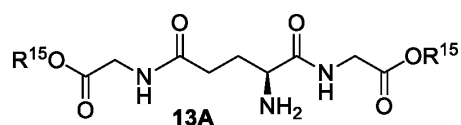


wherein each R¹⁵ is a (C₁-C₆)alkyl, to the compound of formula 13A.

18. A method for preparing a compound of formula 13B:

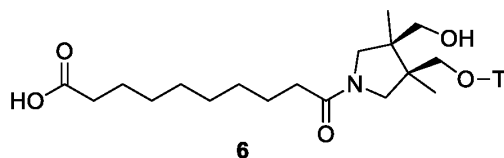


wherein each R¹⁵ is a (C₁-C₆)alkyl and T is an optionally substituted triphenylmethyl group, comprising converting a corresponding compound of formula 13A:



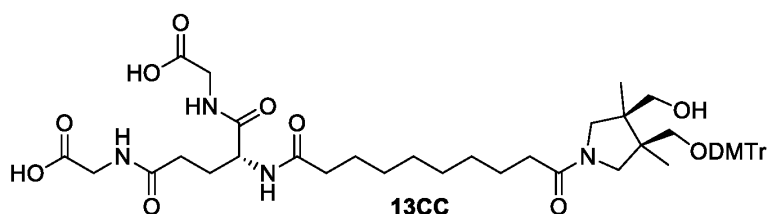
to the compound of formula 13B.

19. The method of claim 18 wherein the compound of formula 13A is converted to the compound of formula 13B, by treating the compound of formula 13A with a corresponding compound of formula 6:

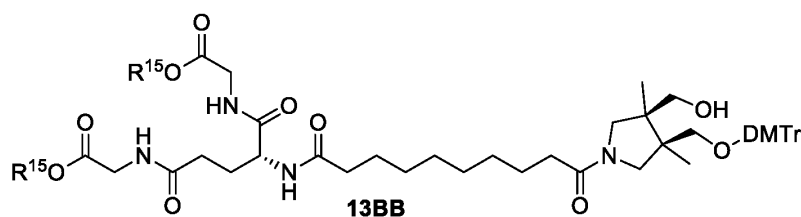


or a salt thereof, under suitable amide forming conditions.

20. A method for preparing a compound of formula 13CC:



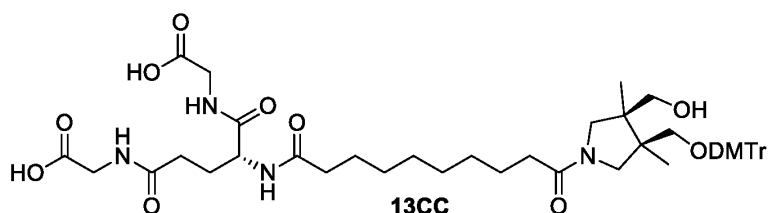
comprising converting a compound of formula 13BB:



wherein each R¹⁵ is a (C₁-C₆)alkyl, to the compound of formula 13CC.

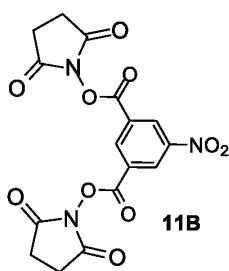
21. The method of claim 20 wherein the compound of formula 13BB is converted to the compound of formula 13CC by treatment with lithium hydroxide in a suitable solvent.

22. A method for preparing a potassium salt of a compound of formula 13CC:

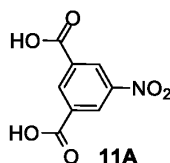


comprising treating a compound of formula 13CC or a salt thereof with potassium carbonate in a suitable solvent to provide the potassium salt of the compound of formula 13CC.

23. A method for preparing a compound of formula 11B:



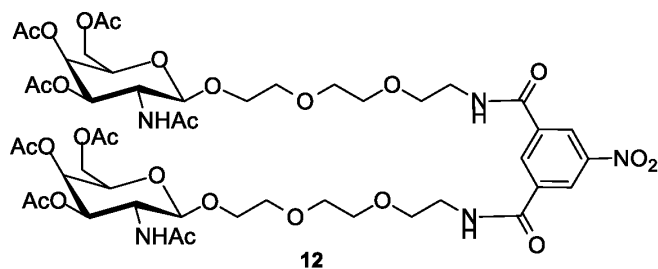
comprising converting a compound of formula 11A:



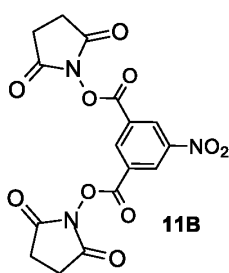
or a salt thereof, to the compound of formula 11B.

24. The method of claim 23 wherein the compound of formula 11A is converted to the compound of formula 11B by treating the compound of formula 11A or the salt thereof with 1-ethyl-3-(3-dimethylaminopropyl)carbodiimide in a suitable solvent.

25. A method for preparing a compound of formula 12:

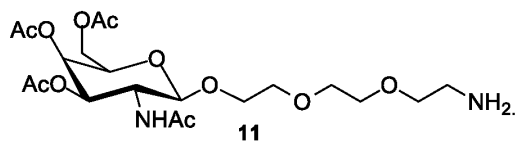


comprising converting a compound of formula 11B:



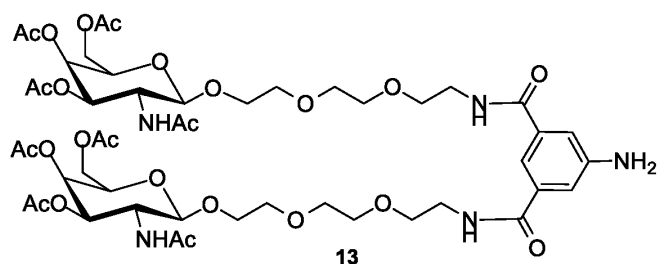
to the compound of formula 12.

26. The method of claim 25, wherein the compound of formula 11B is converted to the compound of formula 12 by treating the compound of formula 11B with a compound of formula 11:

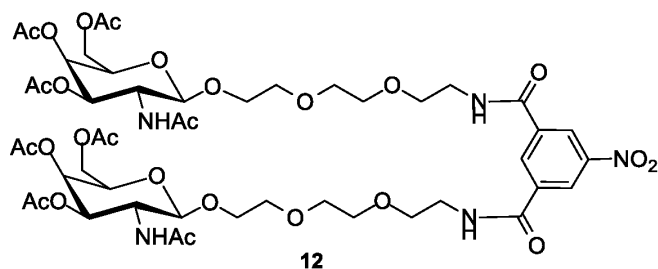


or a salt thereof, in the presence of a suitable base and a suitable solvent.

27. A method for preparing a compound of formula 13:

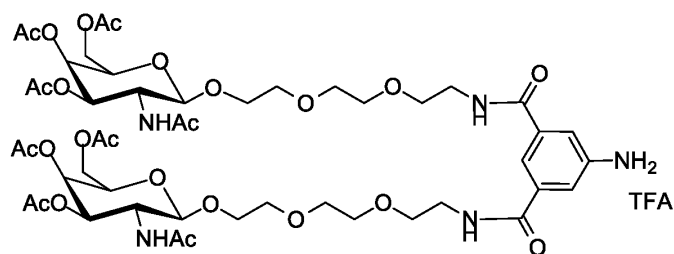


or a salt thereof, comprising reducing a compound of formula 12:

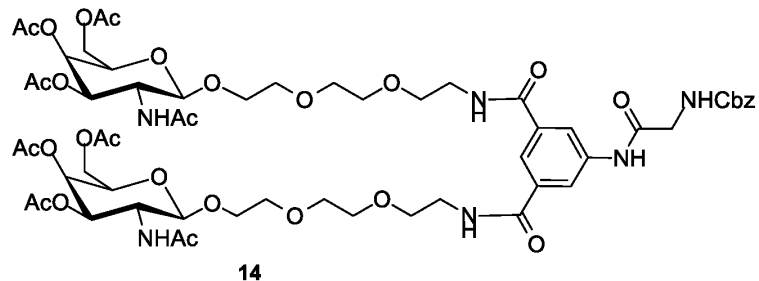


to provide the compound of formula 13 or the salt thereof.

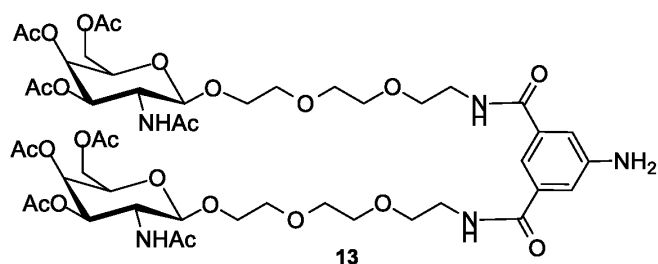
28. The method of claim 27, wherein the compound of formula 13 or a salt thereof, is a trifluoroacetic acid salt of the following formula:



29. A method for preparing a compound of formula 14:

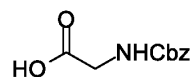


comprising converting a compound of formula 13:



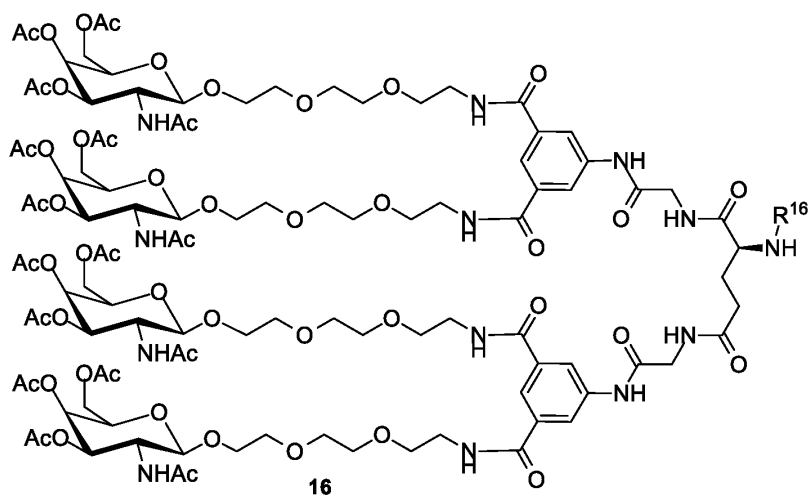
or a salt thereof to the compound of formula 14.

30. The method of claim 29, wherein the compound of formula 13 is converted to the compound of formula 14, by treating the compound of formula 13 with a compound of formula:

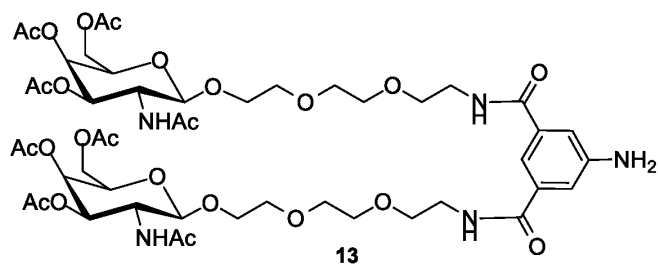


or a salt thereof, under suitable coupling conditions.

31. A method for preparing a compound of formula 16:

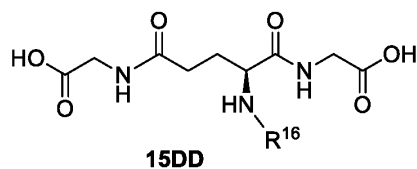


wherein R¹⁶ is an amine protecting group, comprising converting a compound of formula 13:



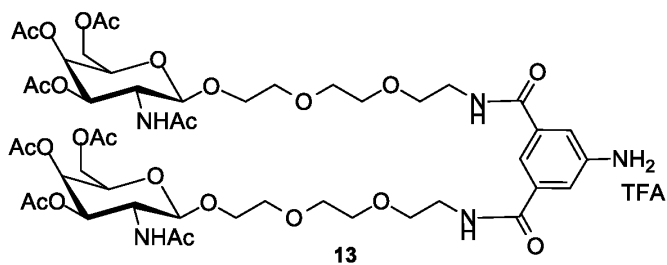
or a salt thereof, to the compound of formula 16.

32. The method of claim 31, wherein the compound of formula 13 or the salt thereof is converted to the compound of formula 16, by treating the compound of formula 13 with a compound of formula 15DD:

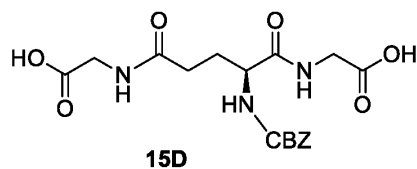


wherein R¹⁶ is an amine protecting group, or a salt thereof, under suitable coupling conditions.

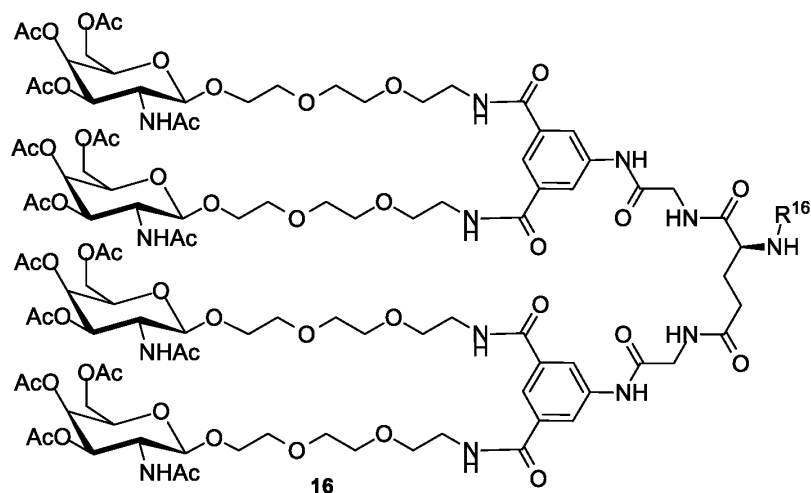
33. The method of claim 31, wherein a trifluoroacetic acid salt of a compound of formula 13:



is treated with a compound of formula 15D:



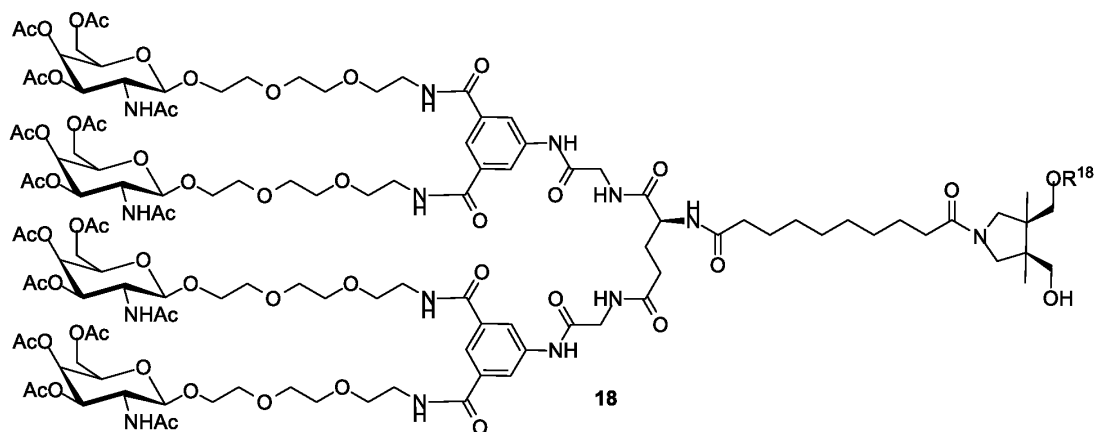
under suitable coupling conditions to provide a compound of formula 16:



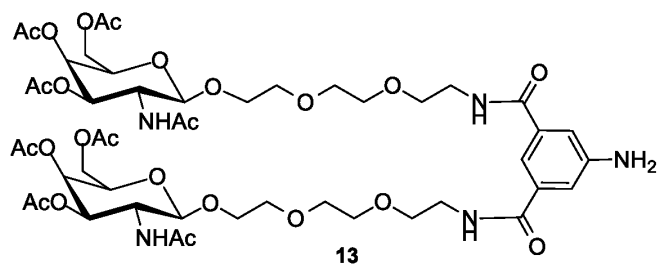
wherein R¹⁶ is benzyloxycarbonyl.

34. The method of any one of claims 31-33, wherein the compound of formula 13 is treated with the compound of formula 15D or 15DD in the presence of propanephosphonic acid anhydride and a solvent comprising dichloromethane to provide the compound of formula 16.

35. A method for preparing a compound of formula 18:

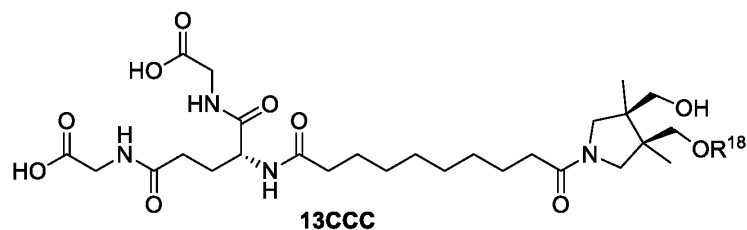


wherein R¹⁸ is a suitable protecting group, comprising converting a compound of formula 13:



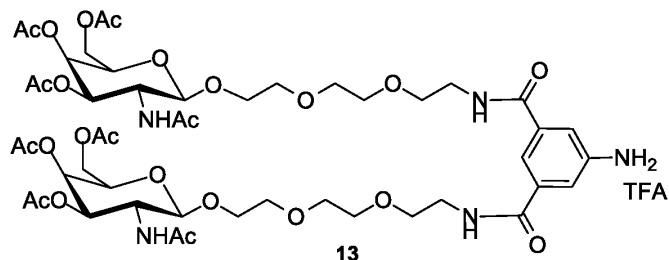
or a salt thereof, to the compound of formula 18.

36. The method of claim 35, wherein the compound of formula 13 or the salt thereof is converted to the compound of formula 18, by treating the compound of formula 13 with a compound of formula 13CCC:

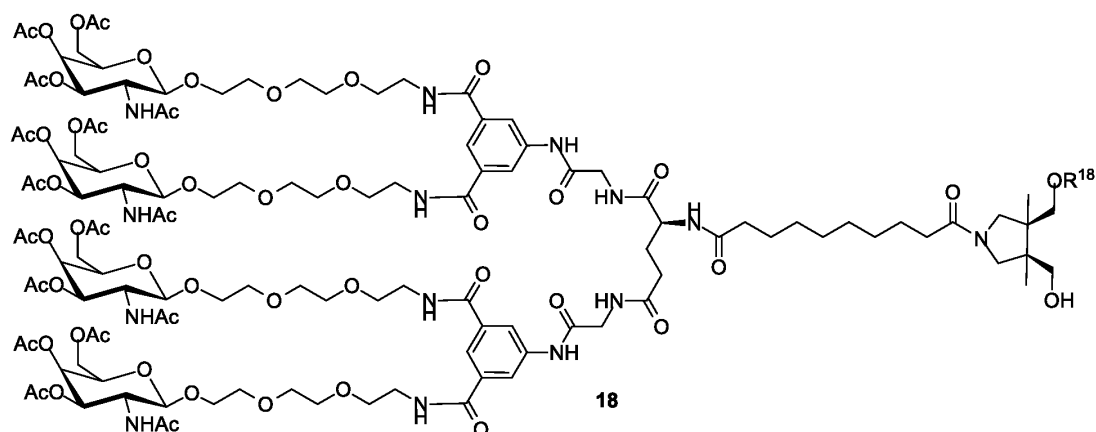


wherein R¹⁸ is a suitable protecting group, or a salt thereof, under suitable coupling conditions.

37. The method of claim 35, wherein a trifluoroacetic acid salt of a compound of formula 13:



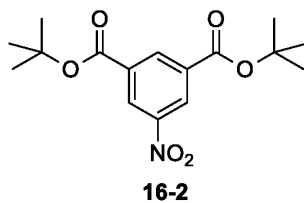
is treated with a compound of formula 13CCC, wherein R¹⁸ is 4,4-dimethoxytriphenylmethyl under suitable coupling conditions to provide a compound of formula 18:



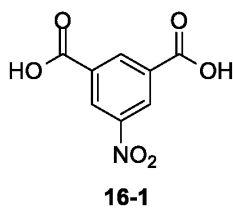
wherein R¹⁸ is 4,4-dimethoxytriphenylmethyl.

38. The method of any one of claims 35-37, wherein the compound of formula 13 is treated with the compound of formula 13CCC in the presence of propanephosphonic acid anhydride and a solvent comprising dichloromethane to provide the compound of formula 18.

39. A method for preparing a compound of formula 16-2:

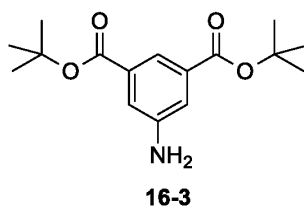


comprising converting a compound of formula 16-1:

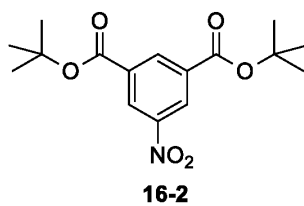


or a salt thereof, to the compound of formula 16-2.

40. A method for preparing a compound of formula 16-3:

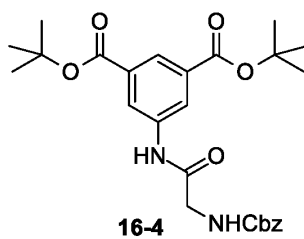


comprising converting a compound of formula 16-2:

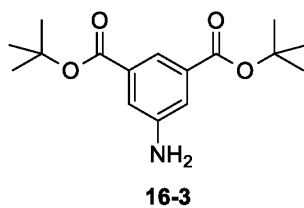


to the compound of formula 16-3.

41. A method for preparing a compound of formula 16-4:

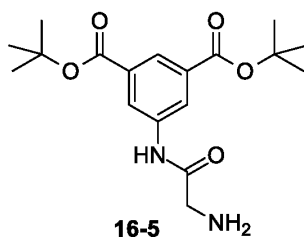


comprising converting a compound of formula 16-3:

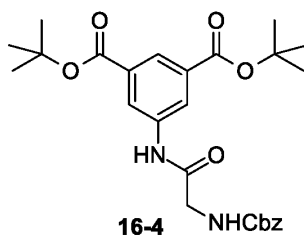


to the compound of formula 16-4.

42. A method for preparing a compound of formula 16-5:

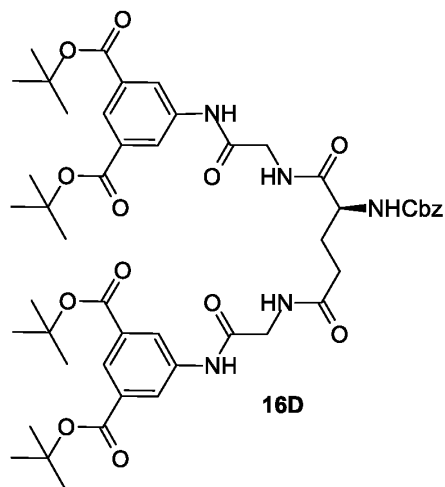


or a salt thereof, comprising converting a compound of formula 16-4:

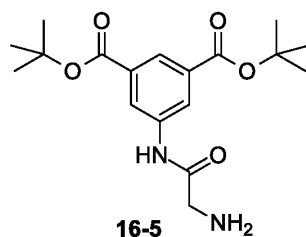


to the compound of formula 16-5.

43. A method for preparing a compound of formula 16D:

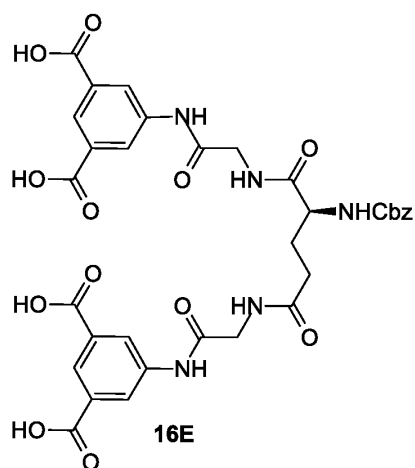


or a salt thereof, comprising converting a compound of formula 16-5:

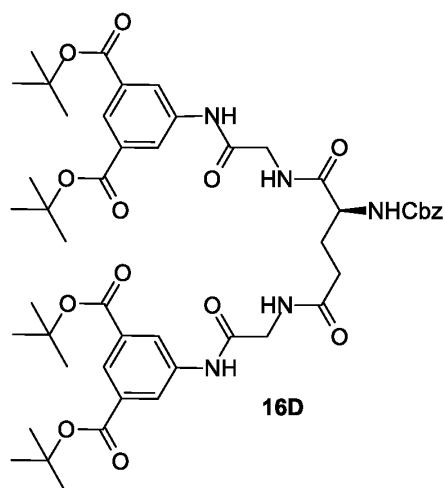


to the compound of formula 16D.

44. A method for preparing a compound of formula 16E:

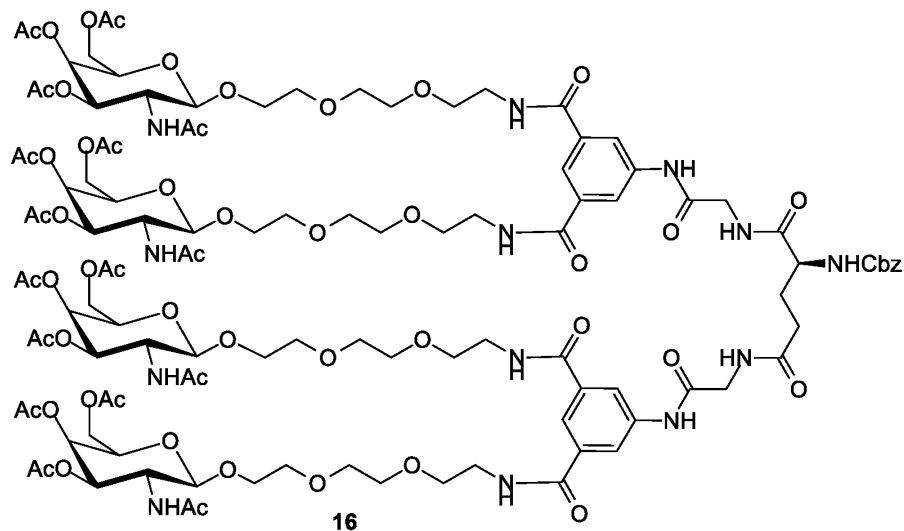


or a salt thereof, comprising converting a compound of formula 16D:

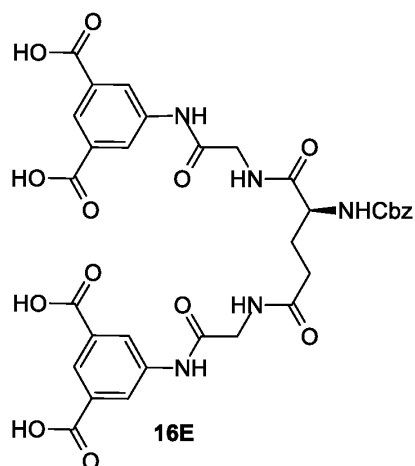


or a salt thereof, to the compound of formula 16D.

45. A method for preparing a compound of formula 16:

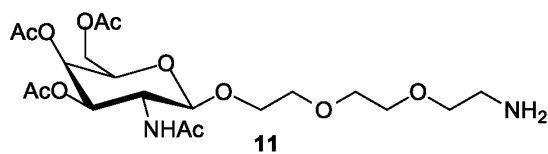


or a salt thereof, comprising converting a compound of formula 16E:



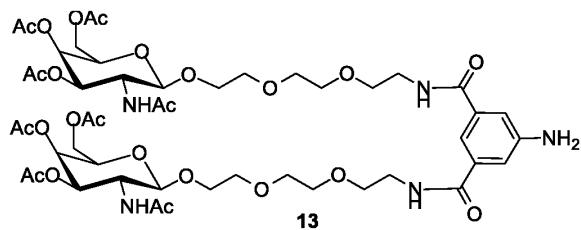
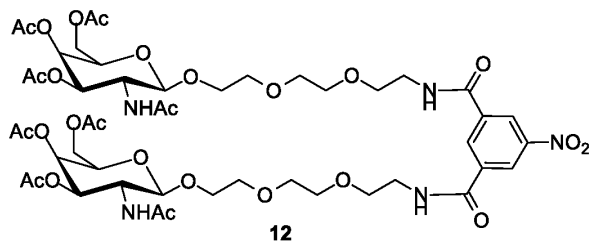
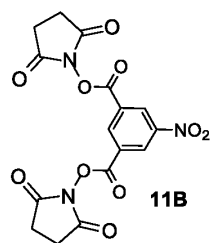
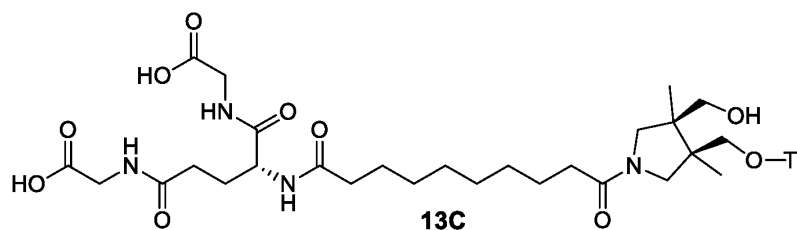
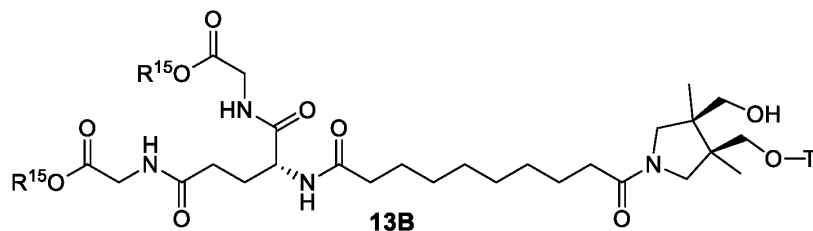
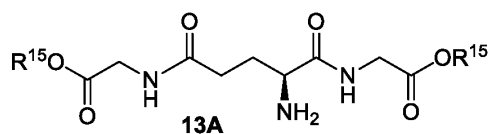
or a salt thereof, to the compound of formula 16.

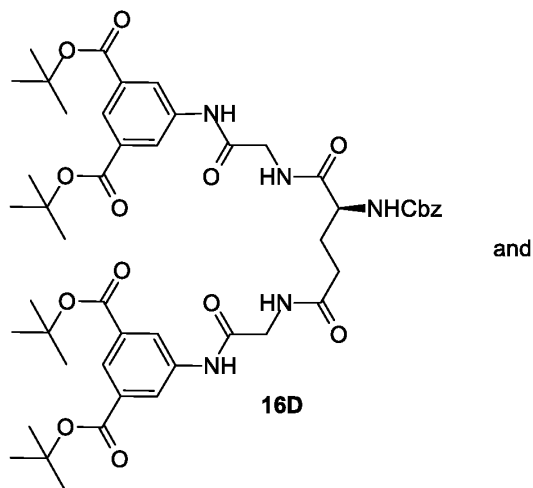
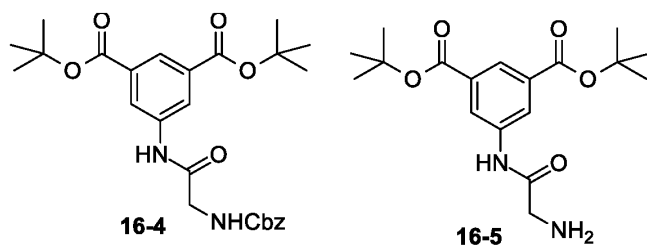
46. The method of claim 45, wherein the compound of formula 16E or the salt thereof is converted to the compound of formula 16 or the salt thereof, by reacting the compound of formula 16E or the salt thereof with a compound of formula 11:



or a salt thereof, under suitable coupling conditions.

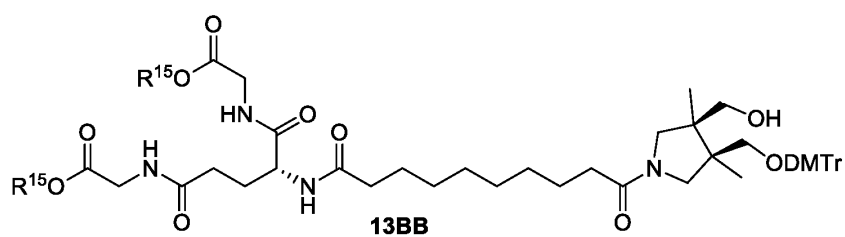
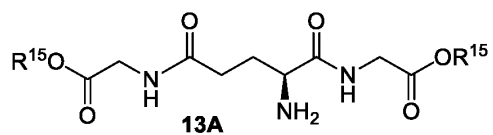
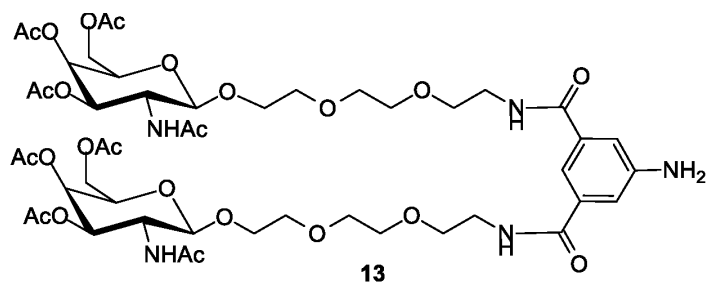
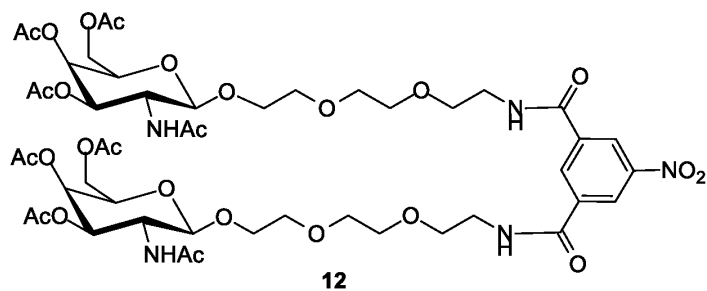
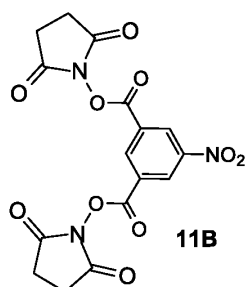
47. A compound selected from the group consisting of:

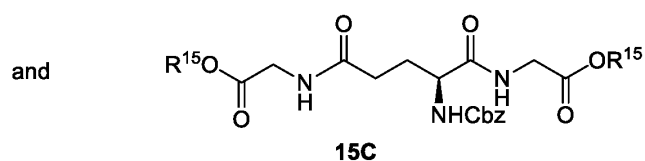
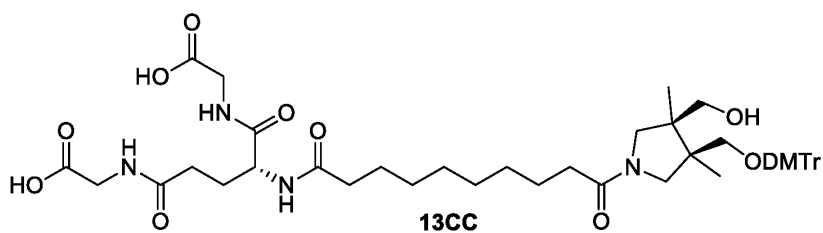




or a salt thereof, wherein each R^{15} is (C₁-C₆)alkyl and each T is an optionally substituted triphenylmethyl group.

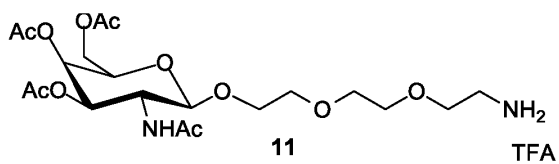
48. A compound selected from the group consisting of:



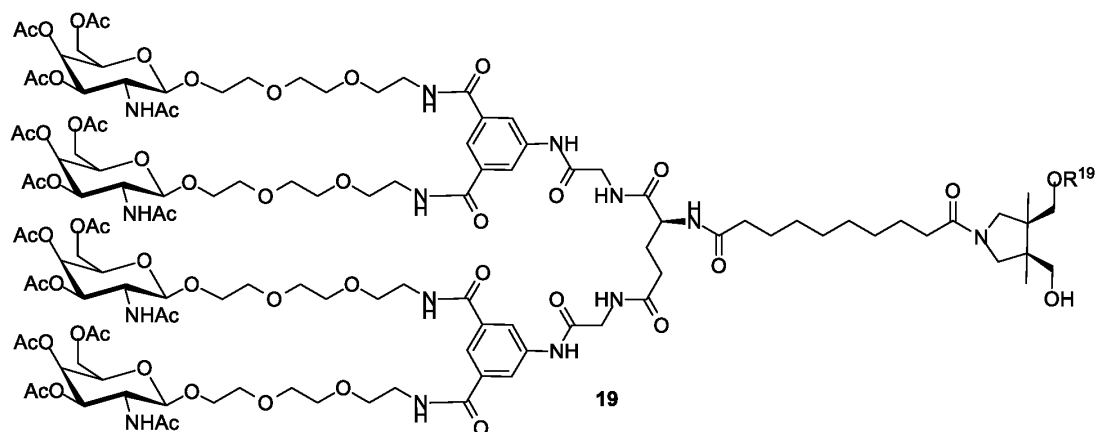


or a salt thereof, wherein each R¹⁵ is (C₁-C₆)alkyl.

49. The salt:

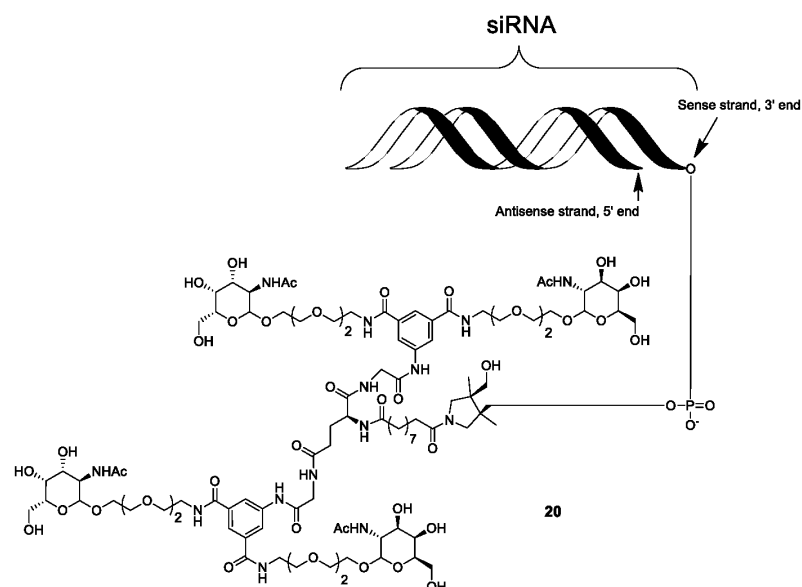


50. The method of any one of claims 35-38, further comprising converting the compound of formula 18 to a compound of formula 19:



wherein R¹⁹ is a group that comprises an siRNA that is suitable for treating HBV and/or HDV.

51. The method of claim 50, wherein the compound of formula 19 is a compound of formula 20:



wherein the siRNA is suitable for treating HBV and/or HDV.

52. A method for treating HBV and/or HDV infection in a human subject comprising administering to the human subject, a therapeutically effective amount of compound of formula 19 or formula 20 that is prepared as described in claim 50 or 51, and a second therapeutic agent that is useful for treating HBV and/or HDV.

53. The method of claim 52 wherein the second therapeutic agent is an HBV capsid formation inhibitor or an HBV RNA destabilizer.

54. The method of claim 53 wherein the HBV RNA destabilizer is an HBV surface antigen inhibitor.

55. The method of any one of claims 52-54 wherein the compound of formula 19 or formula 20 and the second therapeutic agent are administered separately.