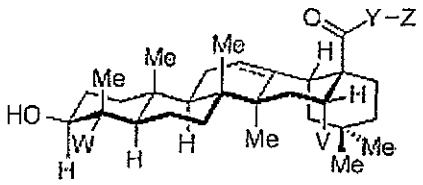
CLAIMS

1. A compound of formula (I), or a pharmaceutically acceptable salt thereof,



(I)

wherein ═══ is a single or double bond;

W is C(O)R, CH_2OR or CH_2R, wherein R is H, or an optionally substituted group selected from acyl, arylalkyl, aryl, heteroaryl, aliphatic, heteroaliphatic, cycloaliphatic and heterocyclyl groups;

V is H or OH;

Y is O;

Z is a linear oligosaccharide or an optionally substituted group selected from the group consisting of amine, amide, acyl, arylalkyl, aryl, heteroaryl, aliphatic, heteroaliphatic, cycloaliphatic and heterocyclyl groups.

2. The compound of Claim 1, or a pharmaceutically acceptable salt thereof, wherein Z is a linear tetrasaccharide or a linear trisacchride with an acyl chain attached to a first sugar residue of the linear tetrasaccharide or a linear trisacchride, wherein the first sugar residue is the sugar residue that is attached directly to Y.

3. The compound of Claim 2, or a pharmaceutically acceptable salt thereof, wherein R is H.

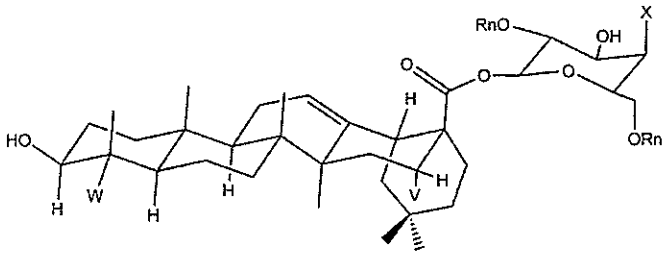
4. The compound of Claim 3, or a pharmaceutically acceptable salt thereof, wherein W is Me and V is OH.

5. The compound of Claim 3, or a pharmaceutically acceptable salt thereof, wherein W is CHO and V is OH.

6. The compound of Claim 3, or a pharmaceutically acceptable salt thereof, W is CH_2OH and V is OH.

7. The compound of any one of Claims 2 to 6, or a pharmaceutically acceptable salt thereof, wherein the acyl chain attached to the first sugar residue is 6-(4-iodobenzoylamino)-hexanoyl.

8. A compound of formula (II), or a pharmaceutically acceptable salt thereof,



(II)

or a pharmaceutically acceptable salt thereof, wherein

W is C(O)R, CH_2OR or CH_2R; wherein R is H, or an optionally substituted group selected from acyl, arylalkyl, aryl, heteroaryl, aliphatic, heteroaliphatic, cycloaliphatic and heterocyclyl groups;

V is H or OH,

X is CH_2R_m, $C(O)R_m$, CH_2OR_m, CH_2R_m, OR_m, or NHR_m, wherein R_m is H, or an optionally substituted group selected from acyl, arylalkyl, aryl, heteroaryl, aliphatic, heteroaliphatic, cycloaliphatic and heterocyclyl groups, and

each occurrence of R_n is independently a hydrogen, a monosaccharide, a disaccharide or a trisaccharide.

9. The compound of Claim 8, or a pharmaceutically acceptable salt thereof, wherein R is H.

10. The compound of Claim 9, or a pharmaceutically acceptable salt thereof, wherein W is Me and V is OH.

11. The compound of Claim 9, or a pharmaceutically acceptable salt thereof, wherein W is CHO and V is OH.

12. The compound of Claim 9, or a pharmaceutically acceptable salt thereof, W is CH_2OH and V is OH.

13. The compound of any one of Claims 8 to 12, or a pharmaceutically acceptable salt thereof, wherein X is NHR_m and wherein R_m is 6-(4-iodobenzoylamino)-hexanoyl.

14. A pharmaceutical composition, comprising:

the compound of any one of Claims 1-13, or a pharmaceutically acceptable salt thereof; and

an immunologically effective amount of an antigen.

15. The use of the pharmaceutical composition of Claim 14 in the manufacture of a medicament for immunizing a subject.

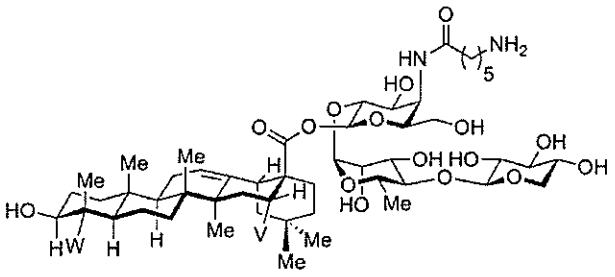
16. A pharmaceutical composition, comprising:

the compound of any one of Claims 1-13, or a pharmaceutically acceptable salt thereof; and

an effective amount of a cytotoxic drug.

17. The use of the pharmaceutical composition of Claim 16 in the manufacture of a medicament for enhancing the effect of a cytotoxic drug in a subject.

18. A compound of formula (III),



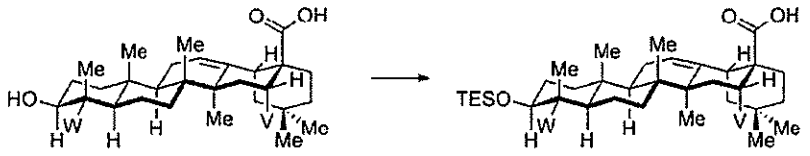
(III),

wherein W is Me, -CHO, or -CH_2OH, and V is H or OH.

19. The use of the compound of Claim 18 as an intermediate in the synthesis of a minimal saponin analogue.

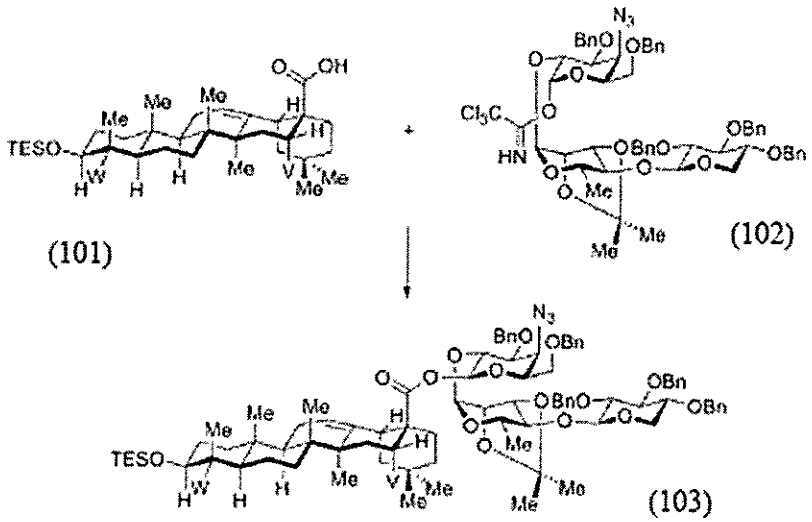
20. A process for preparing the compound of Claim 18, comprising the steps of:

a) reacting a compound of formula (100) with a protecting group to form a compound of formula (101), wherein W is Me, CHO, CH_2OH, or CH_2OR_p; wherein R_p is H or a suitable protecting group as necessary to achieve regioselectivity; V is H or OR_p, and TES is a triethylsilyl protecting group;



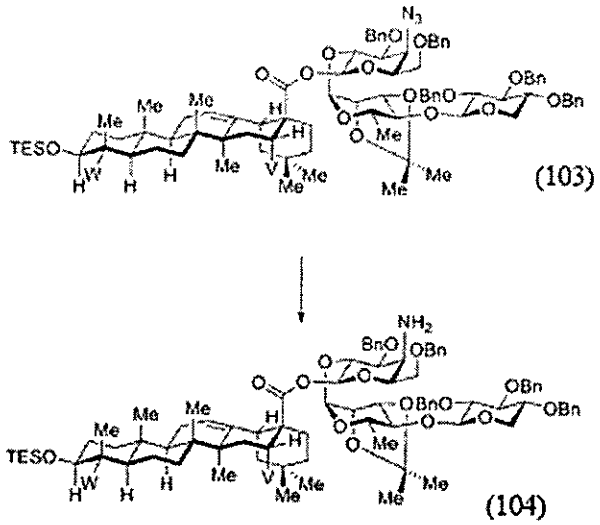
(100) (101)

b) reacting the compound of formula (101) with the compound of formula (102) to form the compound of formula (103), wherein Bn is a benzyl protecting group;



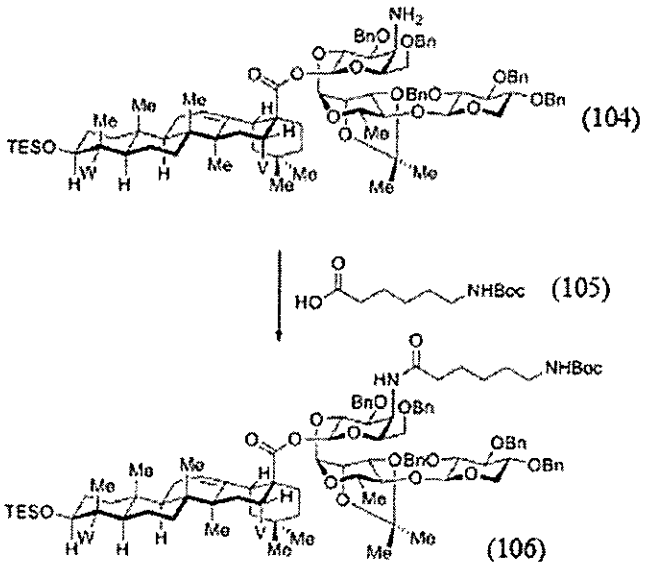
(101) (102) (103)

c) reacting the compound of formula (103) with a reducing agent to form the compound of formula (104);



(103) (104)

d) coupling the compound of formula (104) with compound of formula (105) in the presence of an activating agent to form the compound of formula (106), wherein Boc is a tert-butyloxycarbonyl protecting group;



e) deprotecting the compound of formula (106) to form the compound of formula (III).