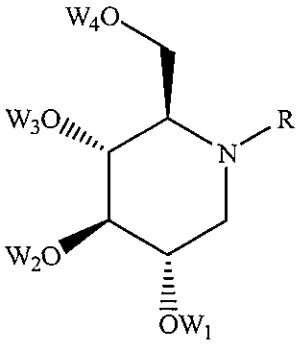
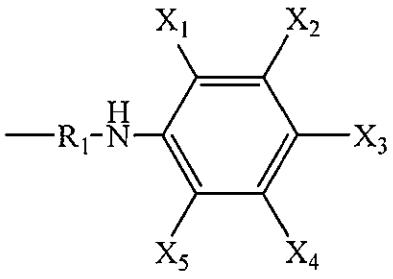
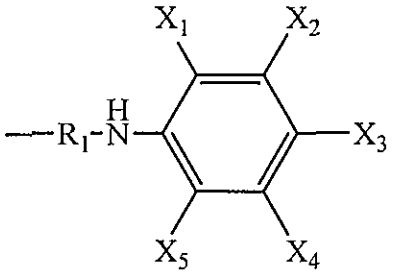
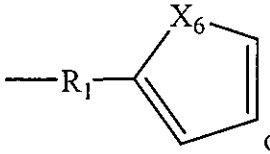
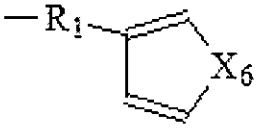
WHAT IS CLAIMED IS:



1. A compound of formula IA: IA or a pharmaceutically acceptable salt thereof, wherein R is

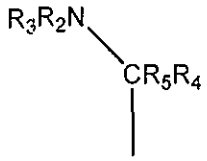
a)  , wherein, optionally, at least one CX group in  is replaced with N; or

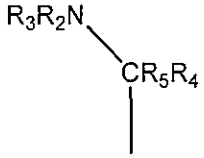
b) wherein R is  or  , wherein X_6 is O or S;

further wherein:

each of W_1-W_4 is independently selected from H and C_1-C_3 alkyl group;

R_1 is C_1-C_{12} alkyl group;

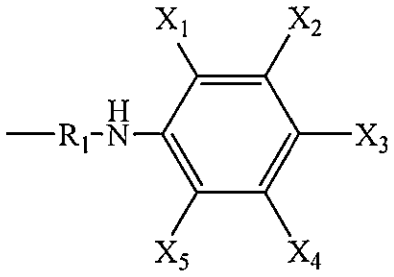
each of X_1-X_5 is independently selected from the group consisting of H, N_3, NO_2, NH_2,  , and a group comprising a heteroatom containing ring,

wherein each of R_2 and R_3 is independently selected from the group consisting of H, C_1-C_3 alkyl, and C_1-C_3 hydroxyalkyl group; R_4 and R_5 are each H, or R_4 and R_5 are together =N-OH , provided that at least one of X_1-X_5 is  or the group comprising the heteroatom containing ring;

or

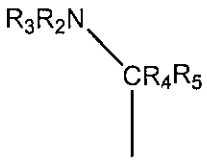
wherein each of X_1-X_5 is independently selected from the group consisting of H, N_3, NO_2, and NH_2, and wherein two of X_1-X_5, which are adjacent, form a heteroatom containing ring.

2. The compound of claim 1, wherein each of W_1-W_4 is hydrogen.

3. The compound of claim 1 or 2, wherein R is 

4. The compound of claim 3, wherein one or more CX groups is replaced with N.

5. The compound of claim 3, wherein none of the CX groups are replaced with N.

6. The compound of any one of claims 3-5, wherein one of X_1-X_5 is 

7. The compound of claim 6, wherein R_2 and R_3 are each methyl and R_4 and R_5 are each H.

8. The compound of claim 6, wherein R_2 is C_1-C_3 hydroxyalkyl and each of R_3, R_4 and R_5 is H.

9. The compound of claim 6, wherein R_2 and R_3 are each H and R_4 and R_5 are together =N-OH.

10. The compound of any one of claims 3-5, wherein one of X_1-X_5 is the group comprising the heteroatom containing ring.

11. The compound of claim 10, wherein the heteroatom containing ring comprises at least one ring forming atom selected from N and O.

12. The compound of claim 10, wherein the heteroatom containing ring is directly bound to the ring of R.

13. The compound of claim 10, wherein the heteroatom containing ring is bound to the ring of R through a C_1-C_3 alkyl group.

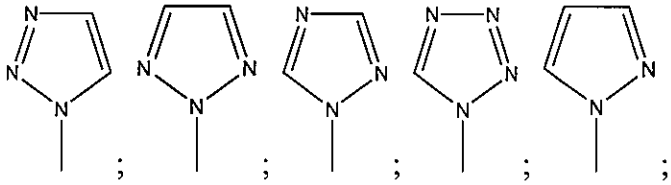
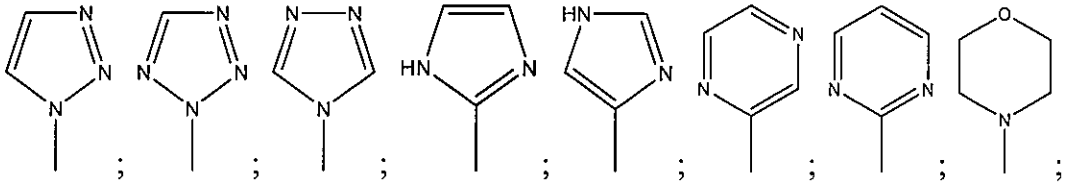
14. The compound of claim 10, wherein the heteroatom containing ring is a three, four, five, six or seven member ring.

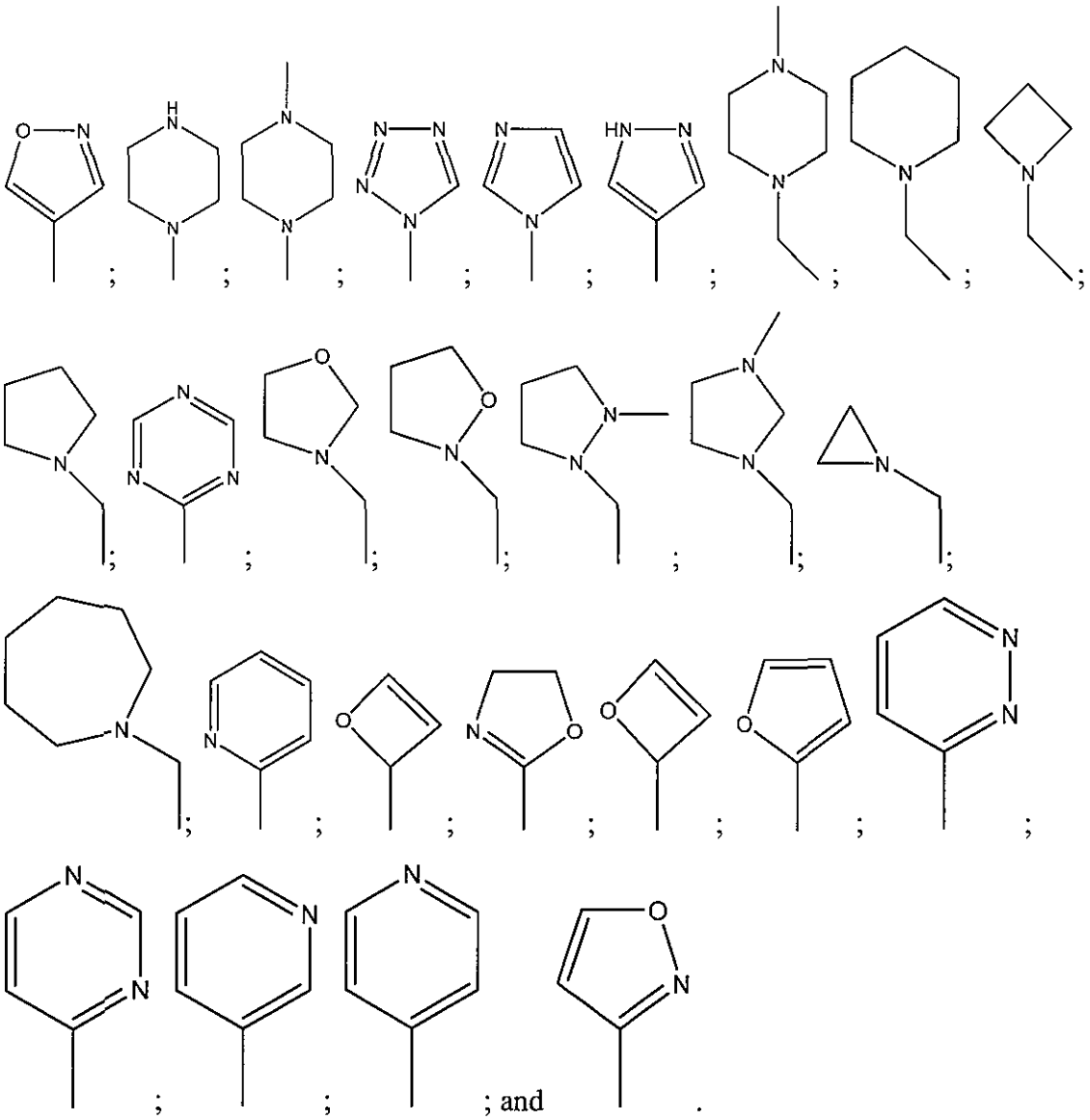
15. The compound of claim 14 wherein the heteroatom containing ring is a conjugated ring.

16. The compound of claim 10, wherein the heteroatom containing ring is a non-conjugated ring.

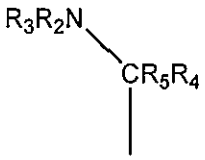
17. The compound of claim 10, wherein the heteroatom containing ring comprises two or more ring forming N atoms.

18. The compound of claim 10, wherein the heteroatom containing ring comprises a ring forming O atom.

19. The compound of claim 10, wherein the group comprising the heteroatom containing ring is selected from  ;  ; ; ; ; ; ; ; ; ; ; ; ; ;

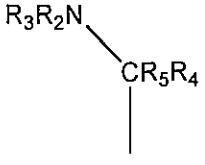


20. The compound of any one of claims 3-5, wherein X_2 or X_3 is



or the group comprising the heteroatom containing ring.

21. The compound of claim 20, wherein X_4 and X_5 are each independently selected from H and NO_2, wherein at least one of X_4 and X_5 is H.

22. The compound of claim 20, wherein X_3 is  or the group comprising the heteroatom containing ring.

23. The compound of claim 22, wherein X_5 is NO_2.

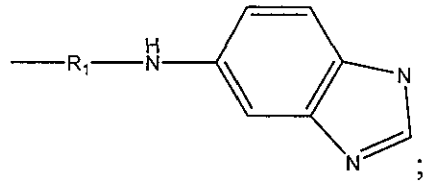
24. The compound of claim 22, wherein X_5 is H.

25. The compound of any one of claims 3-5, wherein no more than two of X_1-X_5 is not H.

26. The compound of any one of claims 3-5, wherein each of X_1-X_5 is independently selected from the group consisting of H, N_3, NO_2, and NH_2, and wherein two adjacent groups selected from X_1-X_5, form a heteroatom containing ring.

27. The compound of claim 26, wherein X_3 and X_4 or X_4 and X_5 are the adjacent groups forming a heteroatom containing ring.

28. The compound of claim 26, wherein R is selected from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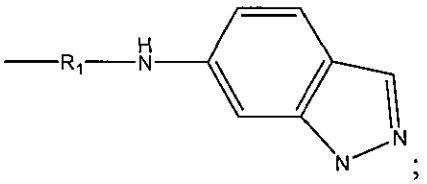
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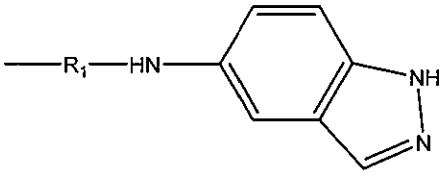
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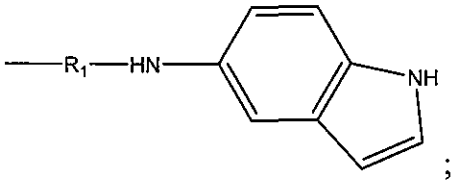
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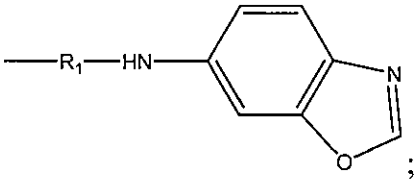
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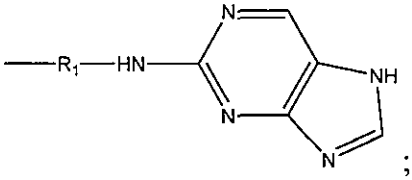
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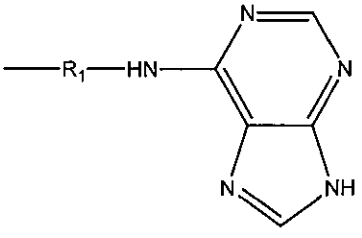
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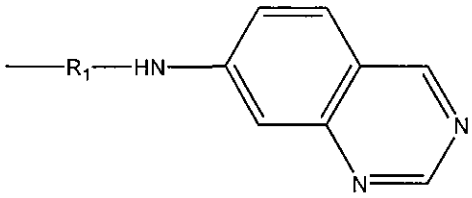
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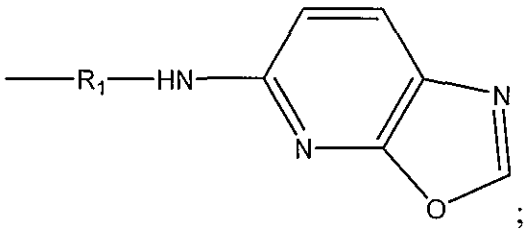
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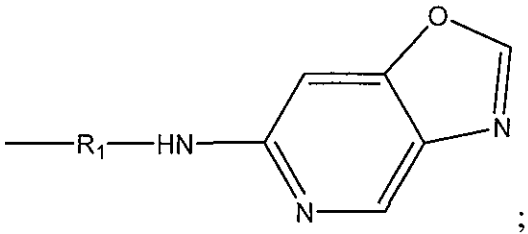
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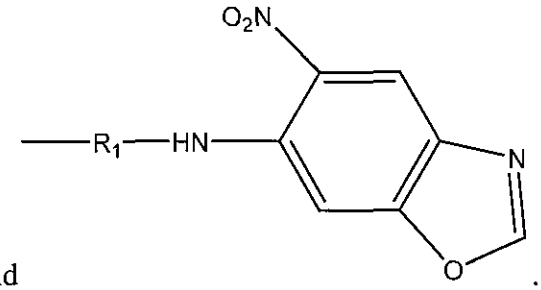
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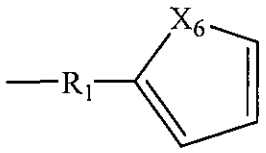
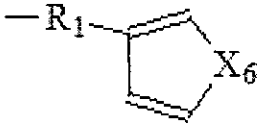
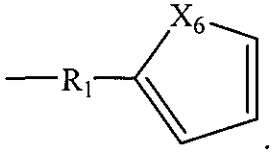
29. The compound of claim 26, wherein those of X_1-X_5, which do not form the heteroatom containing ring, are each H.

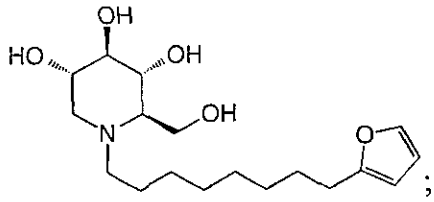
30. The compound of claim 1, wherein R is  or  .

31. The compound of claim 30, wherein R is  .

32. The compound of claim 30 or 31, wherein X_6 is O.

33. The compound of claim 30 or 31, wherein R_1 is C_6-C_{10} alkyl.

34. The compound of claim 1, which is selected from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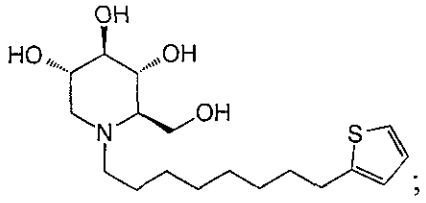
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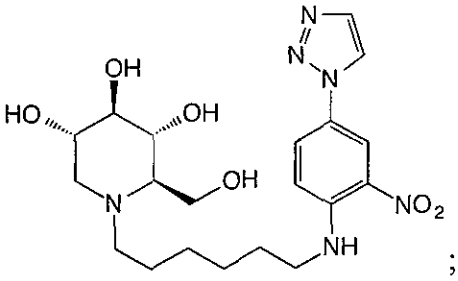
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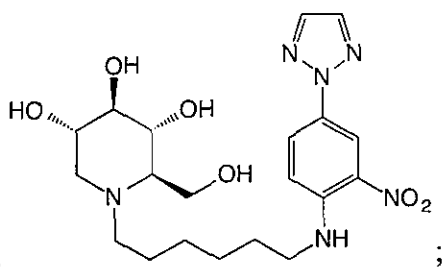
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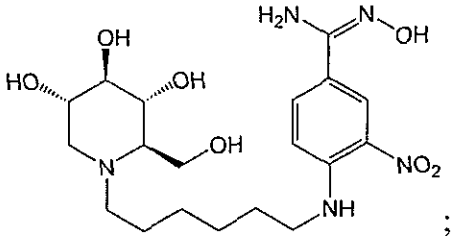
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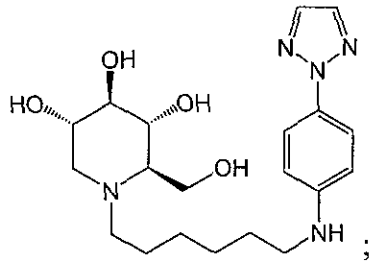
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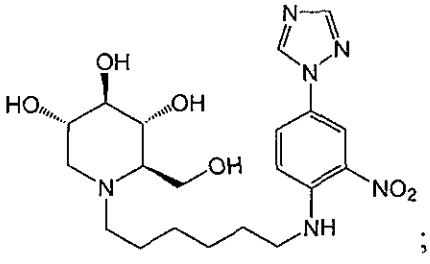
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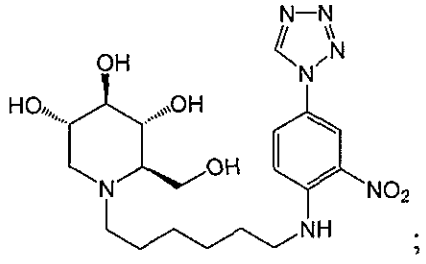
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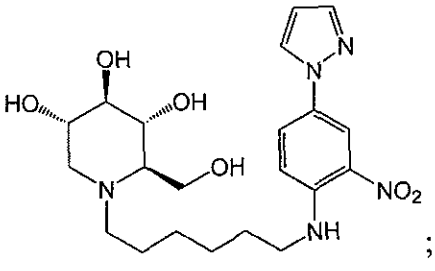
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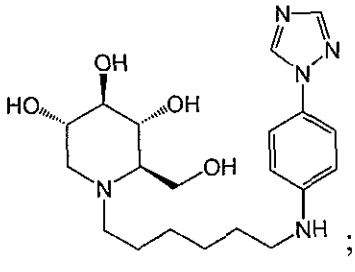
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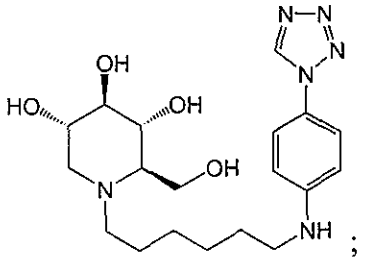
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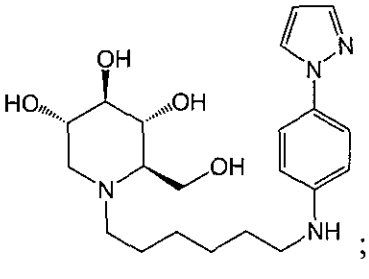
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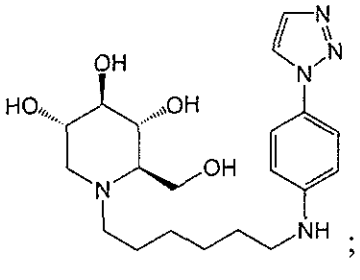
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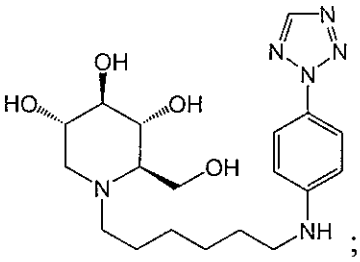
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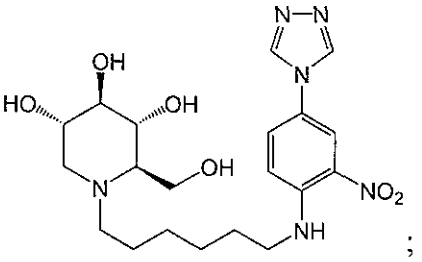
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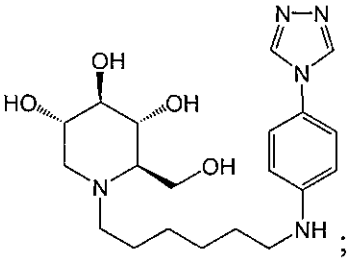
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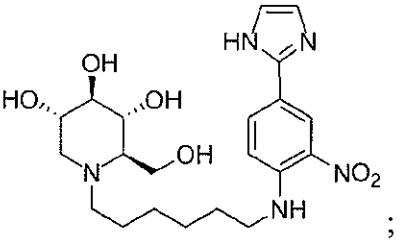
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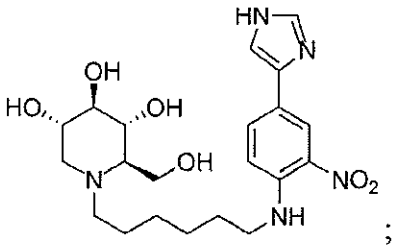
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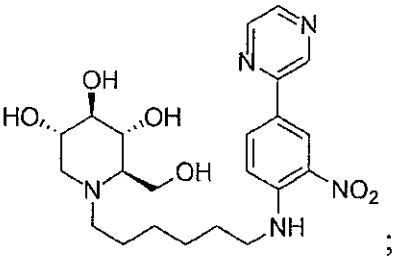
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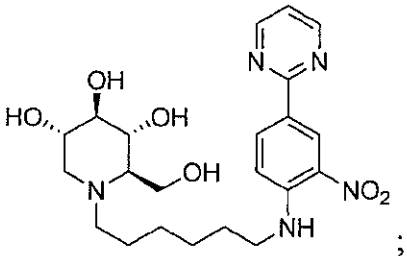
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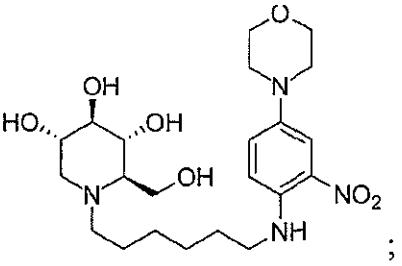
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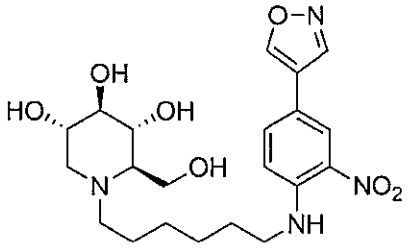
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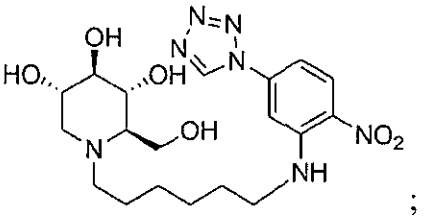
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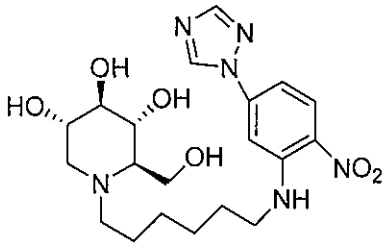
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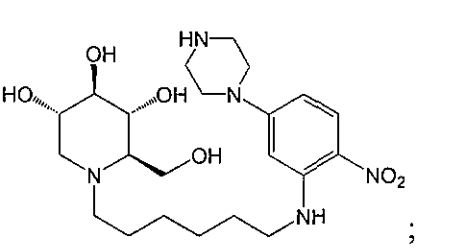
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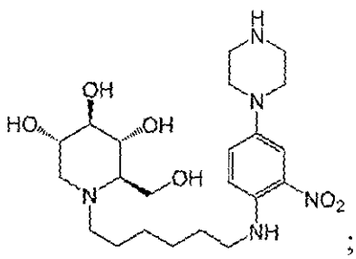
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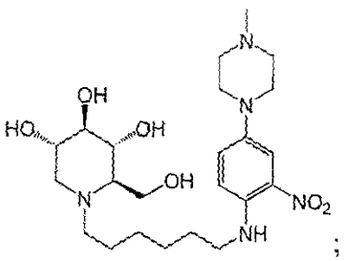
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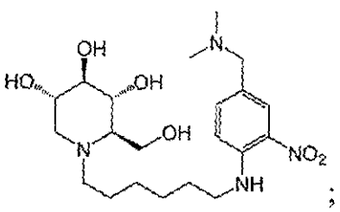
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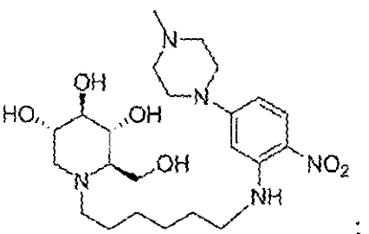
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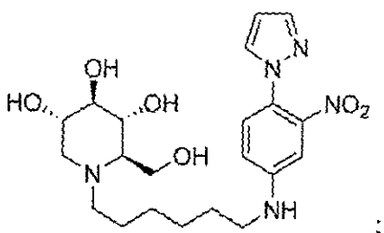
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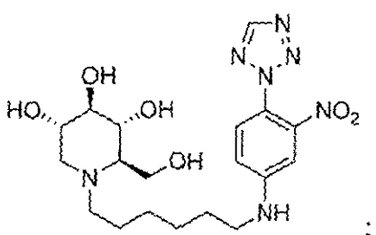
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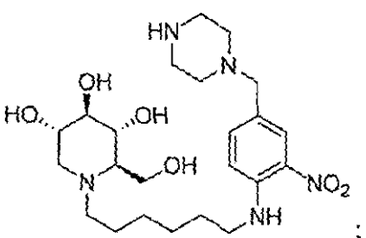
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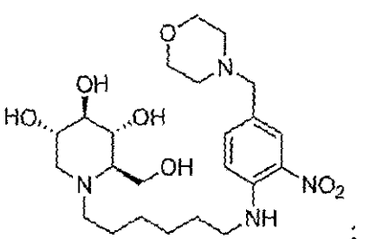
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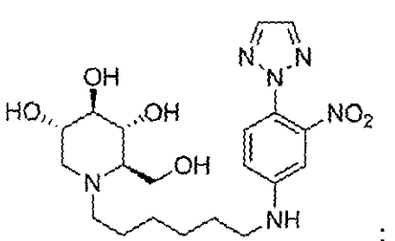
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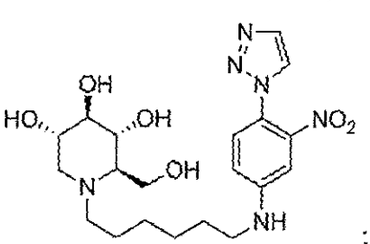
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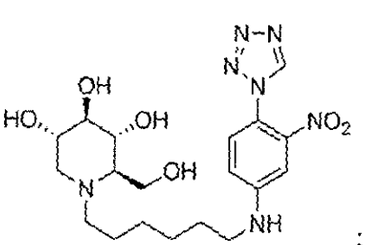
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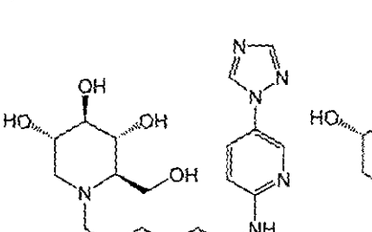
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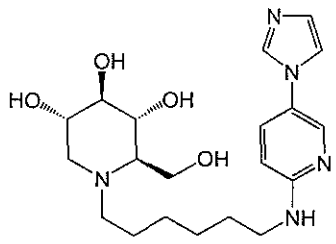
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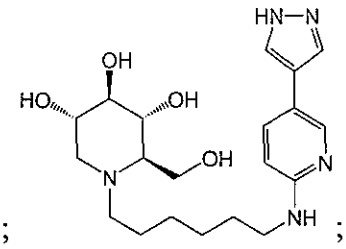
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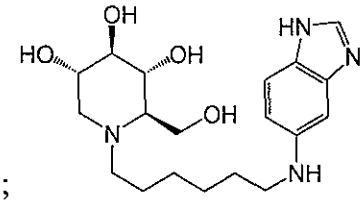
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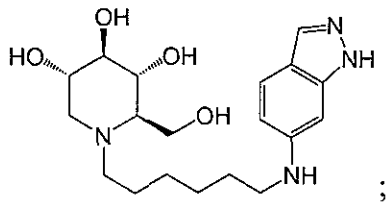
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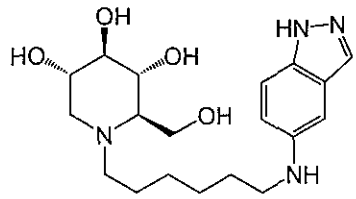
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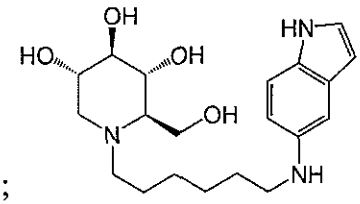
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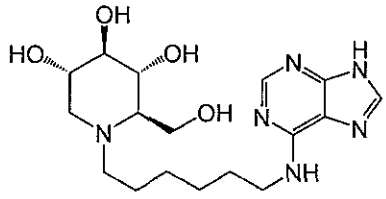
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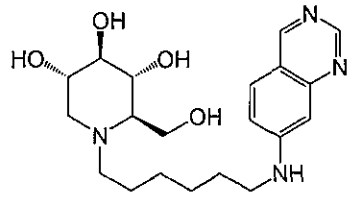
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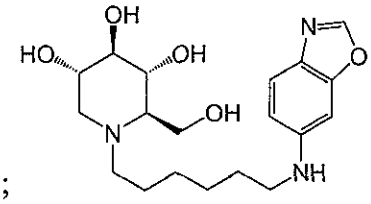
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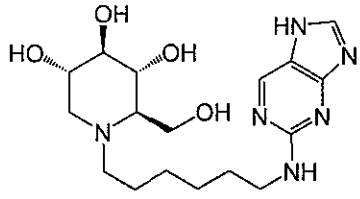
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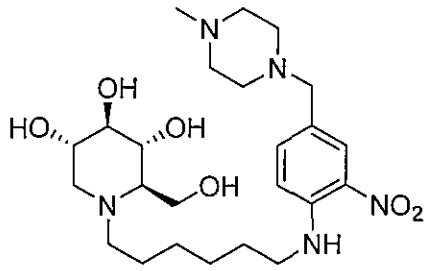
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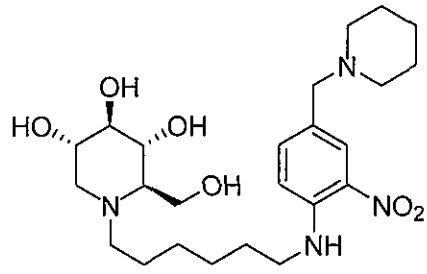
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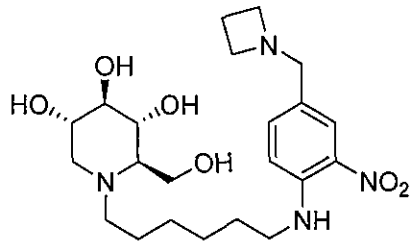
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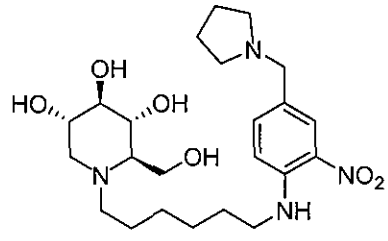
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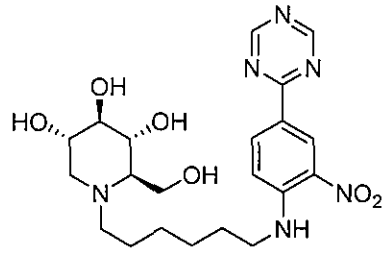
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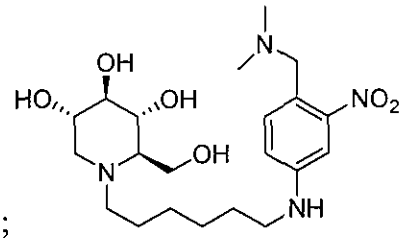
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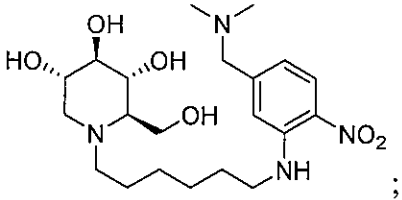
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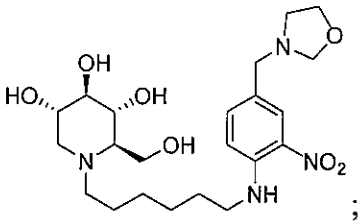
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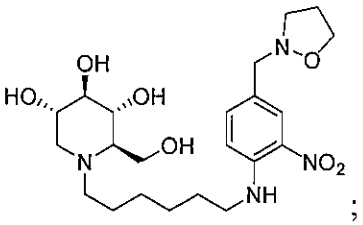
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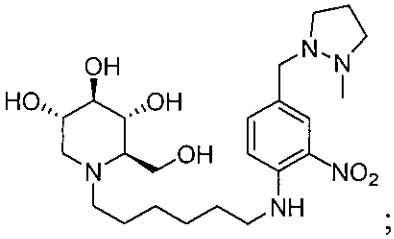
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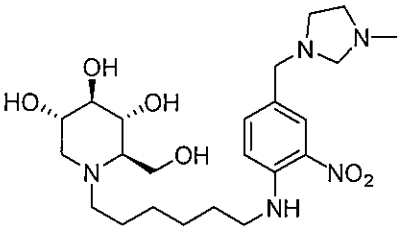
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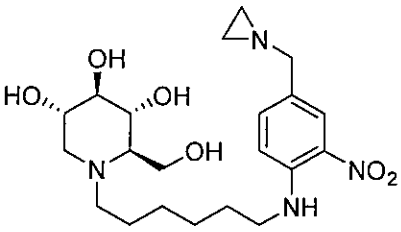
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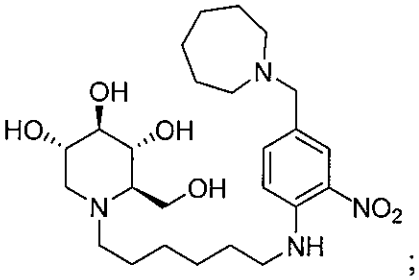
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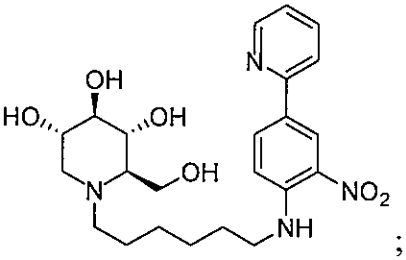
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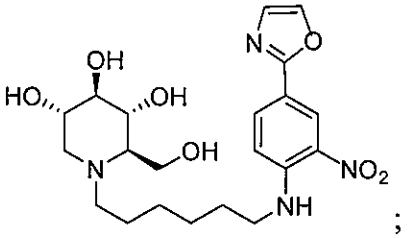
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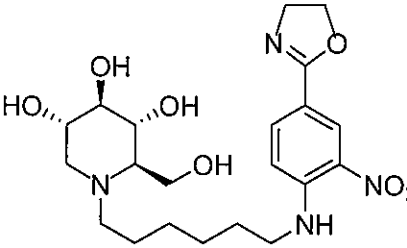
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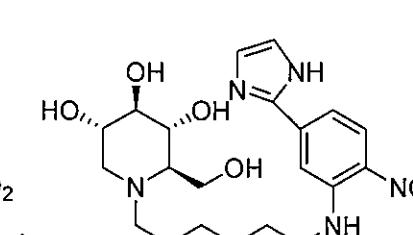
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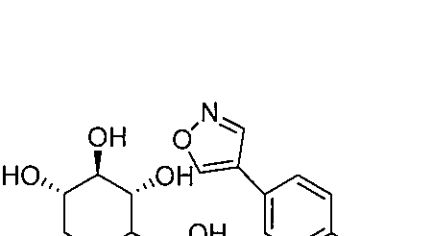
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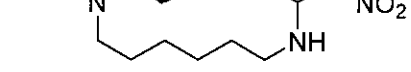
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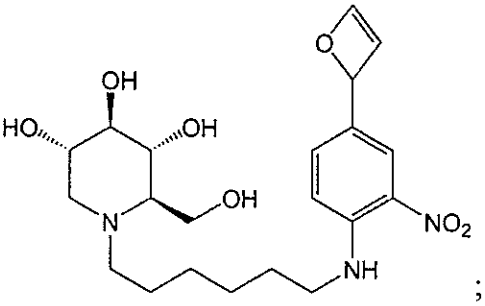
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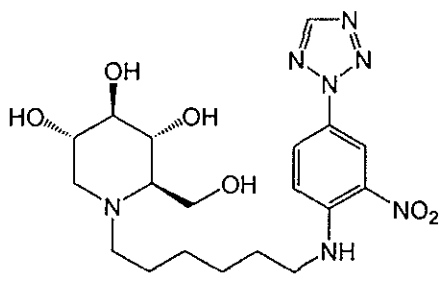
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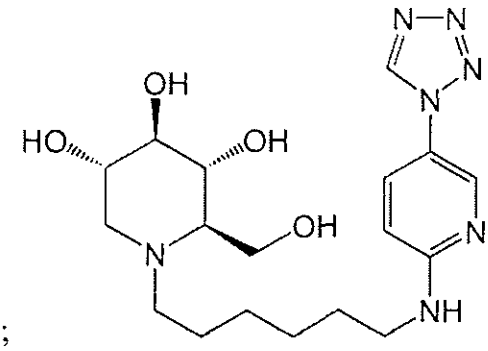
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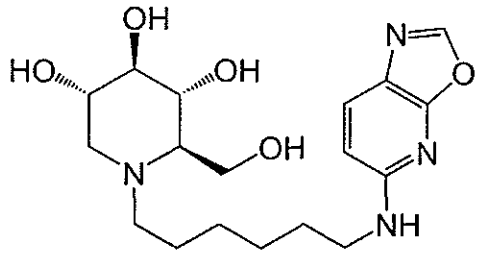
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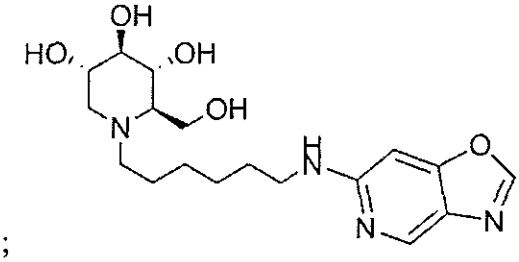
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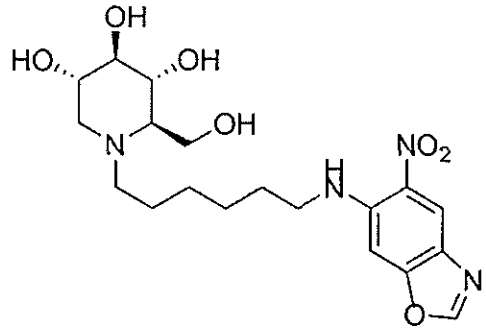
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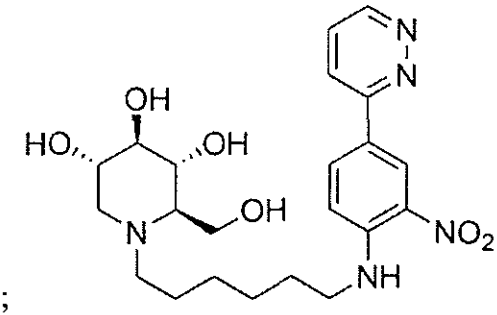
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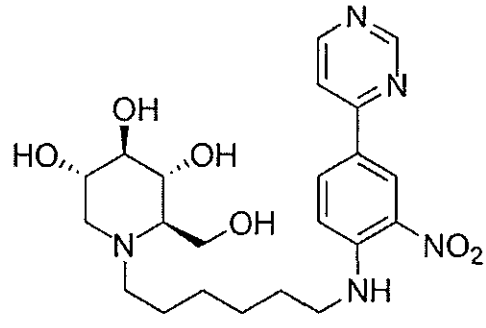
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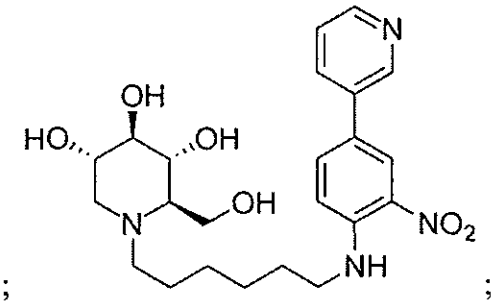
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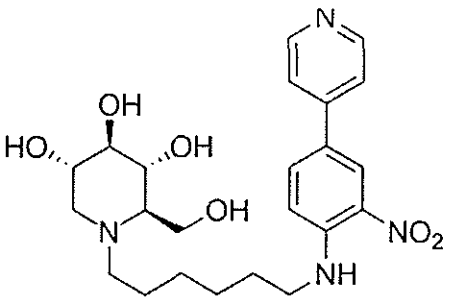

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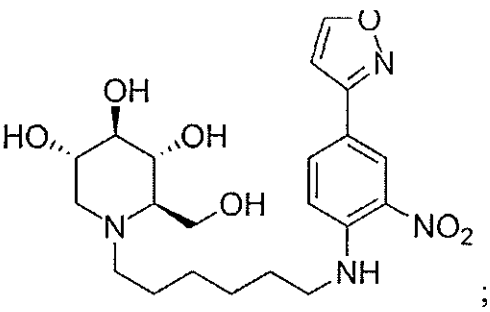

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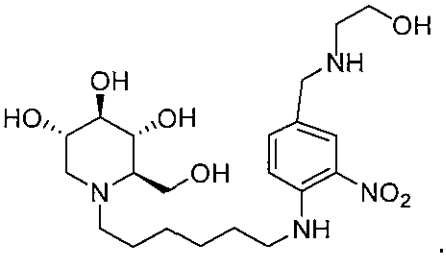

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35. A pharmaceutical composition comprising i) the compound of any one of claims 1-34 and ii) a pharmaceutically acceptable excipient.

36. The pharmaceutical composition of claim 35, wherein the composition is an oral pharmaceutical composition.