[0021] In another embodiment, the invention provides methods for treating or preventing a disorder of lipoprotein metabolism, a disorder of glucose metabolism, a cardiovascular disorder or a related vascular disorder, a disorder involving abnormal modulation of C-reactive protein or a related disorder, aging, Alzheimer's Disease, Parkinson's Disease, pancreatitis, pancreatitius, or abnormal bile production (each being a "Condition"), the method comprising administering to a subject in need thereof an effective amount of a compound of the invention.

[0022] In another embodiment, the invention encompasses methods for monitoring the progress of a therapy for a cardiovascular disorder in a subject, the method comprising:

a. determining the level of free cholesterol in the high-density lipoprotein in the blood of the subject;

b. administering to the subject a compound of the invention;

c. monitoring the level of free cholesterol in the blood of the subject for a period of time after administration of the compound; and

d. evaluating the level of improvement in the subject based on a comparison of the results of steps a. and c.

[0023] In another embodiment, the invention encompasses methods of determining the level of P2Y13 activity in a subject, the method comprising:

a. determining the level of free cholesterol in the high-density lipoprotein in the blood of the subject;

b. administering to the subject a compound of the invention;

c. monitoring the level of free cholesterol in the blood of the subject for a period of time after administration of the compound; and

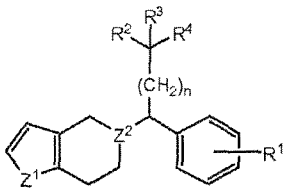
d. evaluating the level of P2Y13 activity in the subject based on a comparison of the results of steps a. and c.

Brief Description of the Figures

[0024] FIGURE 1: Compound Va (dark triangle; top panel), Compound Ih (R-isomer) (dark triangle; middle panel) and Compound Ih (S-isomer) (dark triangle; lower

The present invention also provides any one of the embodiments disclosed below and indicated with the numbers 1 to 100.

1. A compound of Formula (I):



(I),

or a pharmaceutically acceptable salt thereof, wherein

each of R^1, R^2, and R^3 is independently H, -OH, $-NH_2$, -NH(alkyl), -N(alkyl)(alkyl), hydrocarbyl, -O-hydrocarbyl, aryl, -O-aryl, aralkyl, -O-aralykl, heteroaryl, -O-heteroaryl, heterocyclyl, -O-heterocyclyl, halo, $-OCF_3$, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), $-OC(O)NH_2$, -OC(O)NH(alkyl), -OC(O)N(alkyl)(alkyl), -CHNH, -CHN(alkyl), or $-SO_2NH_2$;

R^4 is -H, -OH, -COOH, $-NH_2$, -NH(alkyl), -N(alkyl)(alkyl), -hydrocarbyl, -O-hydrocarbyl, -aryl, -O-aryl, -aralkyl, -O-aralkyl, -heteroaryl, -O-heteroaryl, -heterocyclyl, -O-heterocyclyl, -halo, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), $-OC(O)NH_2$, -OC(O)NH(alkyl), or -OC(O)N(alkyl)(alkyl);

Z^1 is CH_2, S, O, NH, N-hydrocarbyl, N-aryl, N-heteroaryl, or N-heterocyclyl;

Z^2 is CH or N; and

n is an integer from 1-6.

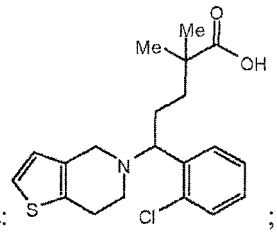
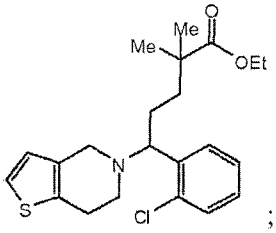
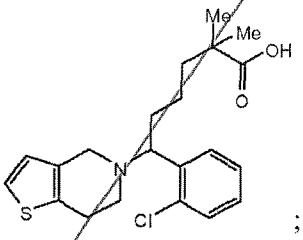
2. The compound or pharmaceutically acceptable salt of claim 1, wherein Z^2 is N.

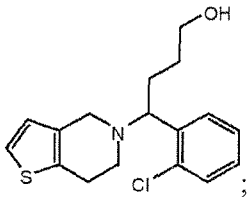
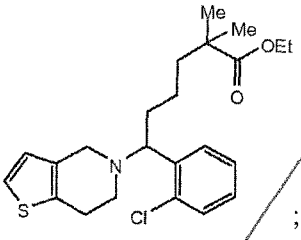
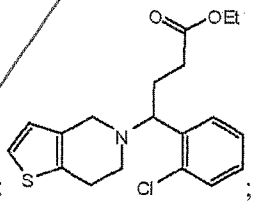
3. The compound or pharmaceutically acceptable salt of claim 2, wherein R^4 is OH, COOH, or an alkyl ester group.

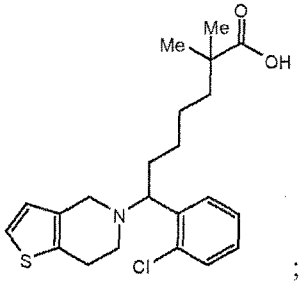
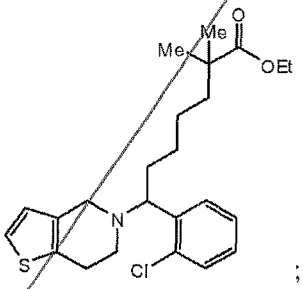
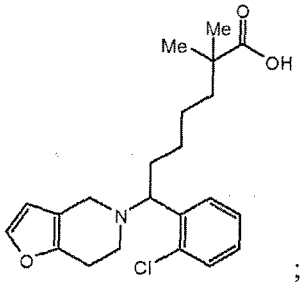
4. The compound or pharmaceutically acceptable salt of claim 3, wherein R^1 is 2-halo.

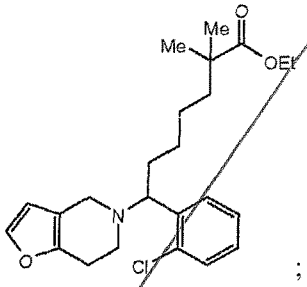
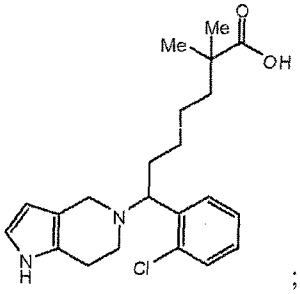
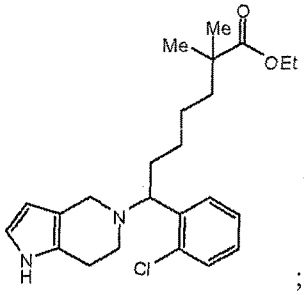
5. The compound or pharmaceutically acceptable salt of claim 4, wherein each of R^2 and R^3 is independently H or alkyl.

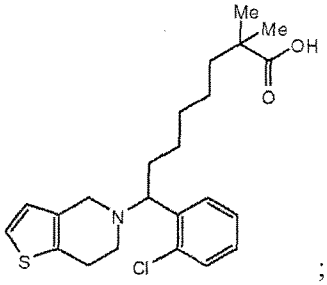
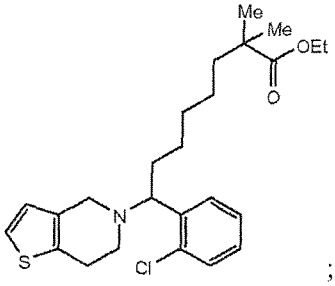
6. The compound of claim 1, wherein the compound is:

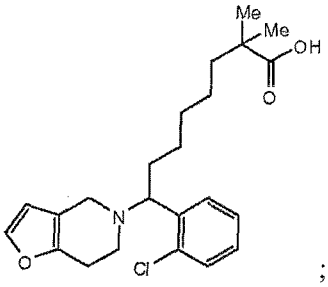
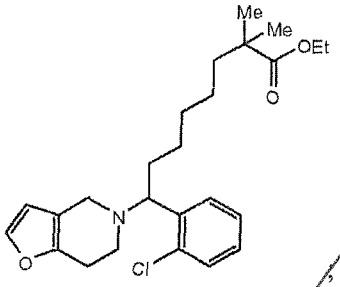
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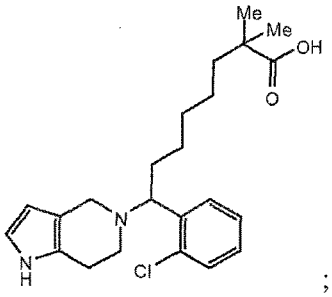
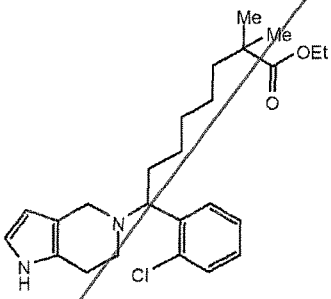
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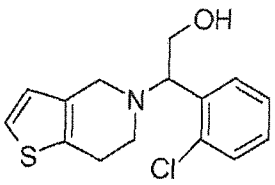
 ; Ih:  ; Ii:  ;

Ij:  ; Ik:  ; Il:  ;

Im:  ; In:  ; Io:

 ; Ip:  ; Iq:

 ; Ir:  or Is:



, or a pharmaceutically acceptable salt of any of the foregoing.

7. A composition comprising an effective amount of a compound or pharmaceutically acceptable salt of the compound of claim 1 and a pharmaceutically acceptable vehicle or carrier.

8. The composition of claim 7, wherein the composition is formulated for oral administration.

9. The composition of claim 7, wherein the composition is in the form of a tablet or capsule.

10. The composition of claim 7, wherein the compound or salt thereof is present in an amount of about 1 mg to about 1,000 mg.

11. A method for treating or preventing a disorder of lipoprotein metabolism, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of claim 1.

12. The method of claim 11, wherein the disorder of lipoprotein metabolism is dyslipidemia, dyslipoproteinemia, lipoprotein overproduction or deficiency, elevation of total cholesterol, elevation of low density lipoprotein concentration, elevation of triglyceride concentration, lipid elimination in bile, metabolic disorder, phospholipid elimination in bile, oxysterol elimination in bile, or peroxisome proliferator activated receptor-associated disorder.

13. A method of treating a disorder of glucose metabolism, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of claim 1.

14. The method of claim 13, wherein the disorder of glucose metabolism is insulin resistance, impaired glucose tolerance, impaired fasting glucose levels in blood, diabetes mellitus, lipodystrophy, central obesity, peripheral lipoatrophy, diabetic nephropathy, diabetic retinopathy, renal disease, or speticemia.

15. A method of treating a cardiovascular disorder, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of claim 1.

16. The method of claim 15, wherein the cardiovascular disorder or related vascular disorders is hypertension, coronary artery disease, myocardial infarcation, arrhythmia, atrial fibrillation, heart valve disease, heart failure, cardiomyopathy, or pericarditis.

17. The method of claim 15, wherein the method provides relief from at least one symptom of the cardiovascular disorder.

18. The method of claim 17, wherein the symptom is impotence.

19. A method of treating inflammation, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of claim 1.

20. A method of treating ischemic necrosis, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of claim 1.

21. A method of treating colon cancer, lung cancer, breast cancer, or skin cancer, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of claim 1.

22. A method of treating a thrombotic disorder, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of claim 1.

23. A method of treating Alzheimer's Disease, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of claim 1.

24. A method of treating Parkinson's Disease, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of claim 1.

25. A method of treating pancreatitis, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of claim 1.

26. A method of treating pancreatitius, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of claim 1.

27. A method of treating abnormal bile production, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of claim 1.

28. A method of monitoring the progress of therapy for a cardiovascular disorder in a subject, the method comprising:

a. determining the level of free cholesterol in the high-density lipoprotein in the blood of the subject;

b. administering to the subject a compound of claim 1;

c. monitoring the level of free cholesterol in the blood of the subject for a period of time after administration of the compound; and

d. evaluating the level of improvement in the subject based on a comparison of the results of steps a. and c.

29. The method of claim 28, wherein the cardiovascular disorder is reverse cholesterol transport from artery to liver or cholesterol elimination in bile acids.

30. A method of determining the level of P2Y13 activity in a subject, the method comprising:

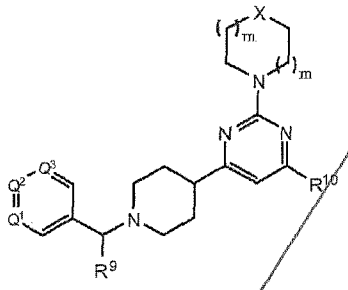
a. determining the level of free cholesterol in the high-density lipoprotein in the blood of the subject;

b. administering to the subject a compound of claim 1;

c. monitoring the level of free cholesterol in the blood of the subject for a period of time after administration of the compound; and

d. evaluating the level of P2Y13 activity in the subject based on a comparison of the results of steps a. and c.

31. A compound of Formula (II):



(II),

or a pharmaceutically acceptable salt thereof, wherein

each R^9 is independently -H, -hydrocarbyl, -aryl, -aralkyl, -heteroaryl, -heterocyclyl, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl),or $-SO_2NH_2$;

each R^{10} is independently -H, -OH, $-NH_2$, -NH(alkyl), -N(alkyl)(alkyl), hydrocarbyl, -O-alkyl, -O-alkenyl, aryl, -O-aryl, aralkyl, -O--aralykl, heteroaryl, -O-heteroaryl, heterocyclyl, -O-heterocyclyl, halo, $-OCF_3$, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), NHC(O)(C_2-C_{10}-alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), $-OC(O)NH_2$, -OC(O)NH(alkyl), -OC(O)N(alkyl)(alkyl), -CHNH, -CHN(alkyl), or $-SO_2NH_2$;

each of Q^1, Q^2, and Q^3 is independently CR^{10} or N;

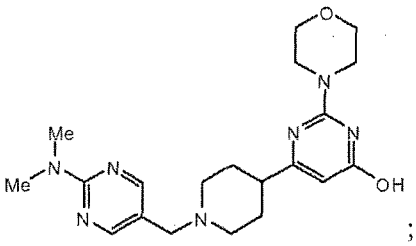
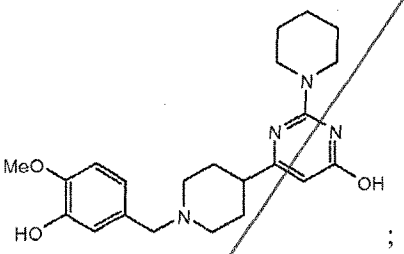
X is CHR^{10}, S, O, or NR^9; and

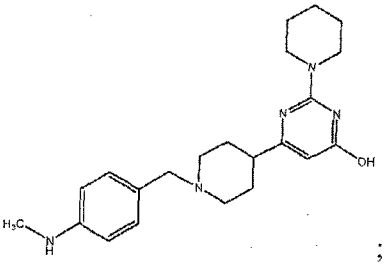
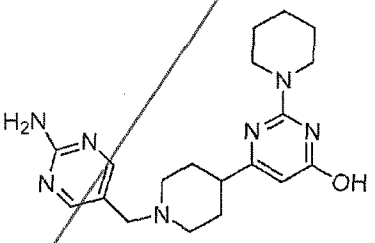
each m is independently an integer from 0-3.

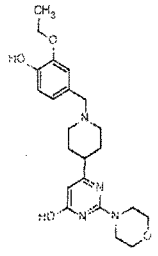
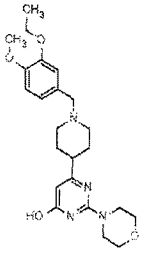
32. The compound or pharmaceutically acceptable salt of claim 31, wherein R^9 is H and R^{10} is OH.

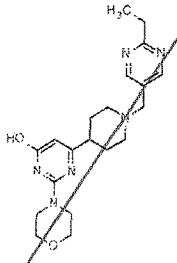
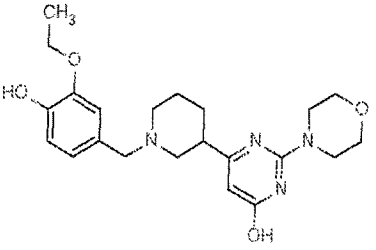
33. The compound or pharmaceutically acceptable salt of claim 32, wherein each m is 1.

34. The compound of claim 31, wherein the compound is:

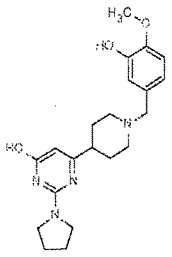
IIa:  ; IIb:  ;

IIc:  ; IId 

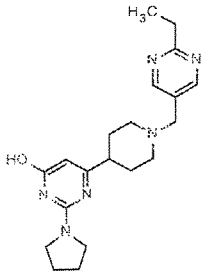
IIe:  IIf: 

IIg:  IIh: 

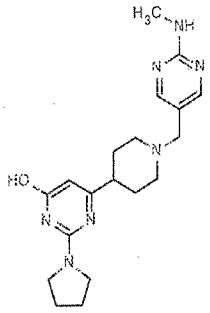
IIi:



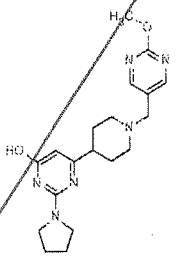
IIj:



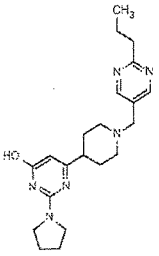
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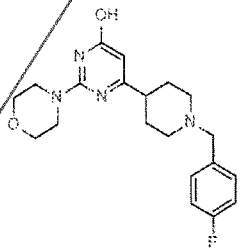
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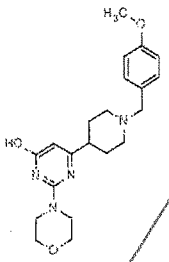
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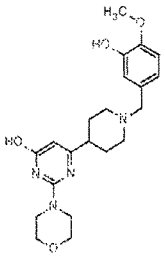
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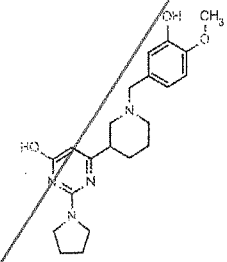
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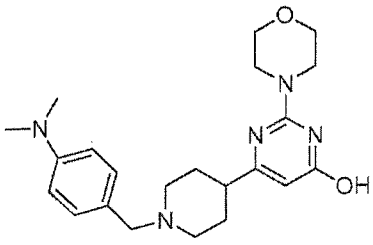
IIp:

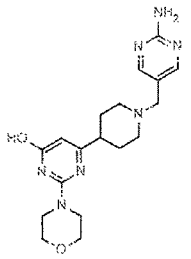
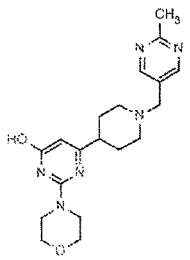


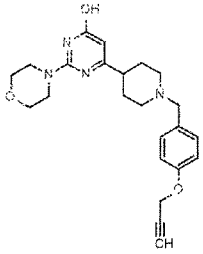
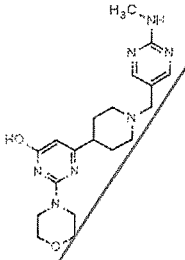
IIq:

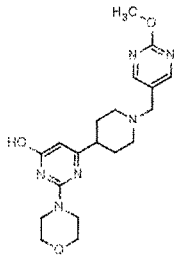
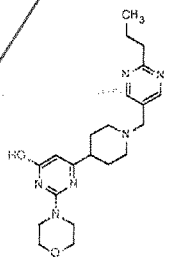


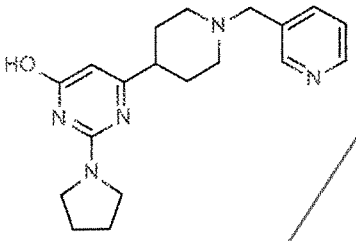
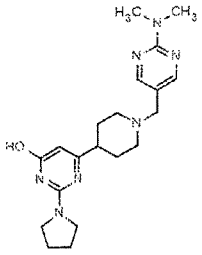
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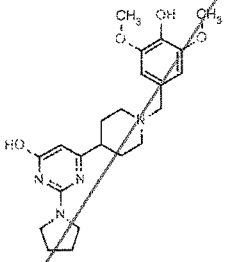
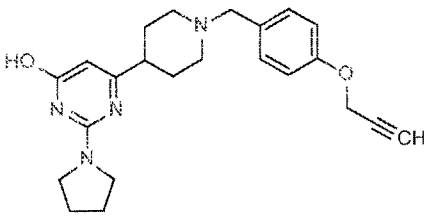


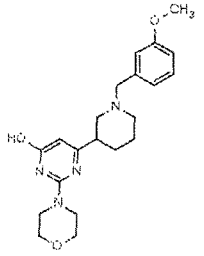
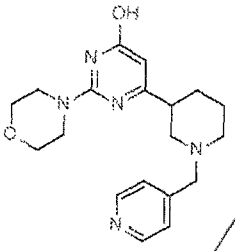
IIs:  ; IIt:  ;

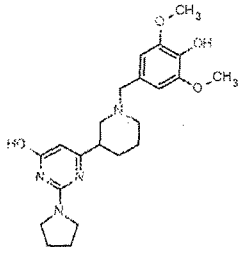
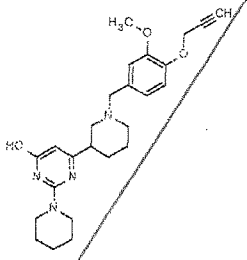
IIu:  ; IIv:  ;

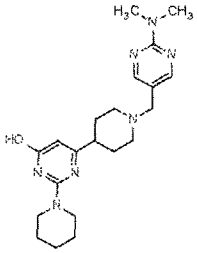
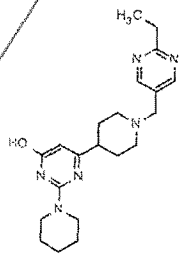
IIw:  ; IIx:  ;

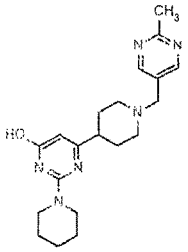
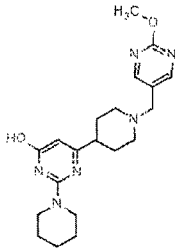
IIy:  ; IIz: 

IIaa  ; IIbb  ;

IIcc:  ; IIdd:  ;

IIee:  ; IIff:  ;

IIgg:  ; IIhh:  ;

IIii:  ; or IIjj: 

, or a pharmaceutically acceptable salt of any of the foregoing.

35. A composition comprising an effective amount of a compound or pharmaceutically acceptable salt of the compound of claim 31 and a pharmaceutically acceptable vehicle or carrier.

36. The composition of claim 35, wherein the composition is formulated for oral administration.

37. The composition of claim 35, wherein the composition is in the form of a tablet or capsule.

38. The composition of claim 35, wherein the compound or salt thereof is present in an amount of about 1 mg to about 1,000 mg.

39. A method for treating a disorder of lipoprotein metabolism, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of claim 31.

40. The method of claim 39, wherein the disorder of lipoprotein metabolism is dyslipidemia, dyslipoproteinemia, lipoprotein overproduction or deficiency, elevation of total cholesterol, elevation of low density lipoprotein concentration, elevation of triglyceride concentration, lipid elimination in bile, metabolic disorder, phospholipid elimination in bile, oxysterol elimination in bile, or peroxisome proliferator activated receptor-associated disorder.

41. A method of treating a disorder of glucose metabolism, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of claim 31.

42. The method of claim 41, wherein the disorder of glucose metabolism is insulin resistance, impaired glucose tolerance, impaired fasting glucose levels in blood, diabetes mellitus, lipodystrophy, central obesity, peripheral lipoatrophy, diabetic nephropathy, diabetic retinopathy, renal disease, or speticemia.

43. A method of treating a cardiovascular disorder, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of claim 31.

44. The method of claim 43, wherein the cardiovascular disorder or related vascular disorders is hypertension, coronary artery disease, myocardial infarcation, arrhythmia, atrial fibrillation, heart valve disease, heart failure, cardiomyopathy, or pericarditis.

45. The method of claim 43, wherein the method provides relief from at least one symptom of the cardiovascular disorder.

46. The method of claim 45, wherein the symptom is impotence.

47. A method of treating inflammation, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of claim 31.

48. A method of treating ischemic necrosis, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of claim 31.

49. A method of treating colon cancer, lung cancer, breast cancer, or skin cancer, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of claim 31.

50. A method of treating a thrombotic disorder, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of claim 31.

51. A method of treating Alzheimer's Disease, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of claim 31.

52. A method of treating Parkinson's Disease, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of claim 31.

53. A method of treating pancreatitis, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of claim 31.

54. A method of treating pancreatitius, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of claim 31.

55. A method of treating abnormal bile production, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of claim 31.

56. A method of monitoring the progress of therapy for a cardiovascular disorder in a subject, the method comprising:

a. determining the level of free cholesterol in the high-density lipoprotein in the blood of the subject;

b. administering to the subject a compound of claim 31;

c. monitoring the level of free cholesterol in the blood of the subject for a period of time after administration of the compound; and

d. evaluating the level of improvement in the subject based on a comparison of the results of steps a. and c.

57. The method of claim 56, wherein the cardiovascular disorder is reverse cholesterol transport from artery to liver or cholesterol elimination in bile acids.

58. A method of determining the level of P2Y13 activity in a subject, the method comprising:

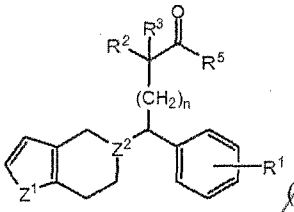
a. determining the level of free cholesterol in the high-density lipoprotein in the blood of the subject;

b. administering to the subject a compound of claim 31;

c. monitoring the level of free cholesterol in the blood of the subject for a period of time after administration of the compound; and

d. evaluating the level of P2Y13 activity in the subject based on a comparison of the results of steps a. and c.

59. A compound of Formula (III):



(III),

or a pharmaceutically acceptable salt thereof, wherein

each of R^1, R^2, and R^3 is independently H, -OH, $-NH_2$, -NH(alkyl), -N(alkyl)(alkyl), hydrocarbyl, -O-hydrocarbyl, aryl, -O-aryl, aralkyl, -O-aralykl, heteroaryl, -O-heteroaryl, heterocyclyl, -O-heterocyclyl, halo, $-OCF_3$, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), $-OC(O)NH_2$, -OC(O)NH(alkyl), -OC(O)N(alkyl)(alkyl), -CHNH, -CHN(alkyl), or $-SO_2NH_2$;

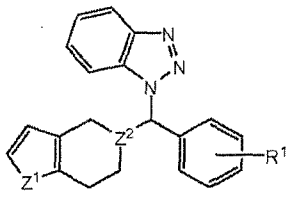
R^5 is -H, -OH, $-NH_2$, -NH(alkyl), -N(alkyl)(alkyl), hydrocarbyl, -O-hydrocarbyl, aryl, -O-aryl, aralkyl, -O-aralkyl, heteroaryl, -O-heteroaryl, heterocyclyl, or -O-heterocyclyl;

Z^1 is CH_2, S, O, NH, N-hydrocarbyl, N-aryl, N-heteroaryl, or N-heterocyclyl;

Z^2 is CH or N; and

n is an integer from 1-6.

60. A compound of Formula (IV):



(IV),

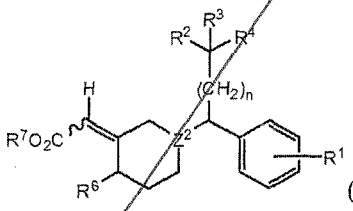
or a pharmaceutically acceptable salt thereof, wherein

R^1 is H, -OH, $-NH_2$, -NH(alkyl), -N(alkyl)(alkyl), hydrocarbyl, -O-hydrocarbyl, aryl, -O-aryl, aralkyl, -O-aralykl, heteroaryl, -O-heteroaryl, heterocyclyl, -O-heterocyclyl, halo, $-OCF_3$, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), $-OC(O)NH_2$, -OC(O)NH(alkyl), -OC(O)N(alkyl)(alkyl), -CHNH, -CHN(alkyl), or $-SO_2NH_2$;

Z^1 is CH_2, S, O, NH, N-hydrocarbyl, N-aryl, N-heteroaryl, or N-heterocyclyl; and

Z^2 is CH or N.

61. A compound of Formula (V):



(V),

or a pharmaceutically acceptable salt thereof, wherein

each of R^1, R^2, and R^3 is independently H, -OH, $-NH_2$, -NH(alkyl), -N(alkyl)(alkyl), hydrocarbyl, -O-hydrocarbyl, aryl, -O-aryl, aralkyl, -O-aralykl, heteroaryl, -O-heteroaryl, heterocyclyl, -O-heterocyclyl, halo, OCF_3, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), $-OC(O)NH_2$, -OC(O)NH(alkyl), -OC(O)N(alkyl)(alkyl), -CHNH, -CHN(alkyl), or $-SO_2NH_2$;

R^4 is -H, -OH, -COOH, $-NH_2$, -NH(alkyl), -N(alkyl)(alkyl), hydrocarbyl, -O-hydrocarbyl, aryl, -O-aryl, aralkyl, -O-aralkyl, heteroaryl, -O-heteroaryl, heterocyclyl, -O-heterocyclyl, halo, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -

C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), -$OC(O)NH_2$, -OC(O)NH(alkyl), or -OC(O)N(alkyl)(alkyl),;

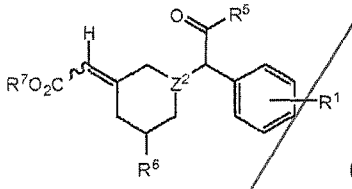
R^6 is -H, -OH, -SH, -S-hydrocarbyl, -COOH, $-NH_2$, -NH(alkyl), -N(alkyl)(alkyl), hydrocarbyl, -O-hydrocarbyl, aryl, -O-aryl, aralkyl, -O-aralkyl, heteroaryl, -O-heteroaryl, heterocyclyl, -O-heterocyclyl, halo, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), $-OC(O)NH_2$, -OC(O)NH(alkyl), or -OC(O)N(alkyl)(alkyl);

R^7 is H, hydrocarbyl, aryl, aralkyl, heteroaryl, or heterocyclyl;

Z^2 is CH or N; and

n is an integer from 1-6.

62. A compound of Formula (VI):



(VI),

or a pharmaceutically acceptable salt thereof, wherein

R^1, is H, -OH, $-NH_2$, -NH(alkyl), -N(alkyl)(alkyl), hydrocarbyl, -O-hydrocarbyl, aryl, -O-aryl, aralkyl, -O-aralykl, heteroaryl, -O-heteroaryl, heterocyclyl, -O-heterocyclyl, halo, $-OCF_3$, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), $-OC(O)NH_2$, -OC(O)NH(alkyl), -OC(O)N(alkyl)(alkyl), -CHNH, -CHN(alkyl), or $-SO_2NH_2$;

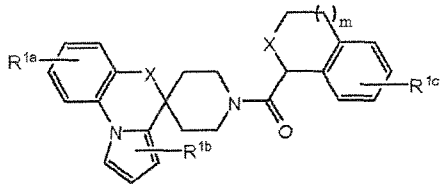
R^5 is -H, -OH, $-NH_2$, -NH(alkyl), -N(alkyl)(alkyl), hydrocarbyl, -O-hydrocarbyl, aryl, -O-aryl, aralkyl, -O-aralkyl, heteroaryl, -O-heteroaryl, heterocyclyl, -O-heterocyclyl, or halo;

R^6 is -H, -OH, -SH, -S-hydrocarbyl, -COOH, $-NH_2$, -NH(alkyl), -N(alkyl)(alkyl), hydrocarbyl, -O-hydrocarbyl, aryl, -O-aryl, aralkyl, -O-aralkyl, heteroaryl, -O-heteroaryl, heterocyclyl, -O-heterocyclyl, halo, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), $-OC(O)NH_2$, -OC(O)NH(alkyl), or -OC(O)N(alkyl)(alkyl);

R^7 is H, hydrocarbyl, aryl, aralkyl, heteroaryl, or heterocyclyl; and

Z^2 is CH or N.

63. A compound of Formula (VII):



(VII),

or a pharmaceutically acceptable salt thereof, wherein

each of R^{1a}, R^{1b}, and R^{1c} is independently -H, -OH, $-NH_2$, -NH(alkyl), -N(alkyl)(alkyl), hydrocarbyl, -O-hydrocarbyl, aryl, -O-aryl, aralkyl, -O-aralykl, heteroaryl, -O-heteroaryl, heterocyclyl, -O-heterocyclyl, halo, $-OCF_3$, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), $-OC(O)NH_2$, -OC(O)NH(alkyl), -OC(O)N(alkyl)(alkyl), -CHNH, -CHN(alkyl), or $-SO_2NH_2$;

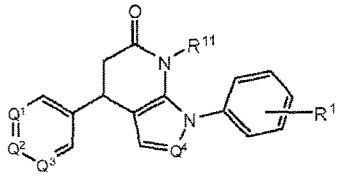
each X is independently CHR^{10}, S, O, or NR^9;

each R^9 is independently H, hydrocarbyl, aryl, aralkyl, heteroaryl, heterocyclyl, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), or $-SO_2NH_2$;

each R^{10} is independently -H, -OH, $-NH_2$, -NH(alkyl), -N(alkyl)(alkyl), hydrocarbyl, -O-hydrocarbyl, aryl, -O-aryl, aralkyl, -O-aralykl, heteroaryl, -O-heteroaryl, heterocyclyl, -O-heterocyclyl, halo, $-OCF_3$, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), $-OC(O)NH_2$, -OC(O)NH(alkyl), -OC(O)N(alkyl)(alkyl), -CHNH, -CHN(alkyl), or $-SO_2NH_2$; and

m is an integer from 0-3.

64. A compound of Formula (VIII):



(VIII),

or a pharmaceutically acceptable salt thereof, wherein

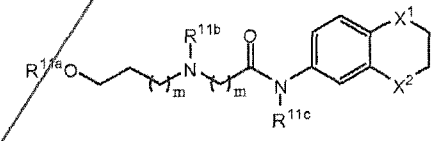
R^1 is -H, -OH, $-NH_2$, -NH(alkyl), -N(alkyl)(alkyl), hydrocarbyl, -O-hydrocarbyl, aryl, -O-aryl, aralkyl, -O-aralykl, heteroaryl, -O-heteroaryl, heterocyclyl, -O-heterocyclyl, halo, $-OCF_3$, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), $-OC(O)NH_2$, -OC(O)NH(alkyl), -OC(O)N(alkyl)(alkyl), -CHNH, -CHN(alkyl), or $-SO_2NH_2$;

R^{11} is H, hydrocarbyl, aryl, aralkyl, heteroaryl, heterocyclyl, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), or $-SO_2NH_2$;

each of Q^1, Q^2, Q^3, and Q^4 is independently CR^{10} or N; and

each R^{10} is independently -H, -OH, $-NH_2$, -NH(alkyl), -N(alkyl)(alkyl), hydrocarbyl, -O-hydrocarbyl, aryl, -O-aryl, aralkyl, -O-aralykl, heteroaryl, -O-heteroaryl, heterocyclyl, -O-heterocyclyl, halo, $-OCF_3$, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), $-OC(O)NH_2$, -OC(O)NH(alkyl), -OC(O)N(alkyl)(alkyl), -CHNH, -CHN(alkyl), or $-SO_2NH_2$.

65. A compound of Formula (IX):



(IX),

or a pharmaceutically acceptable salt thereof, wherein

each of R^{11a}, R^{11b}, and R^{11c} is independently H, hydrocarbyl, aryl, aralkyl, heteroaryl, heterocyclyl, -C(O)(alkyl), -C(O)O(alkyl),, $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), or $-SO_2NH_2$;

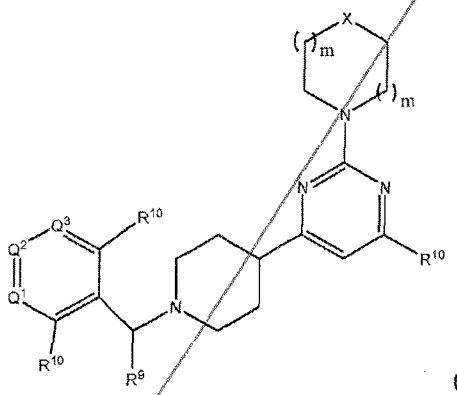
each of X^1 and X^2 is independently CHR^{10}, S, O, NR^9, or N-acyl;

each R^9 is independently H, hydrocarbyl, aryl, aralkyl, heteroaryl, heterocyclyl, -C(O)O(alkyl), -OC(O)(alkyl), -C(O)NH_2, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), or -SO_2NH_2;

each R^{10} is independently -H, -OH, -NH_2, -NH(alkyl), -N(alkyl)(alkyl), hydrocarbyl, -O-hydrocarbyl, aryl, -O-aryl, aralkyl, -O-aralykl, heteroaryl, -O-heteroaryl, heterocyclyl, -O-heterocyclyl, halo, -OCF_3, -C(O)O(alkyl), -OC(O)(alkyl), -C(O)NH_2, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), -OC(O)NH_2, -OC(O)NH(alkyl), -OC(O)N(alkyl)(alkyl), -CHNH, -CHN(alkyl), or -SO_2NH_2; and

each *m* is independently an integer from 1-3.

66. A compound of Formula (XII):



(XII)

or a pharmaceutically acceptable salt thereof, wherein

each R^9 is independently -H, -hydrocarbyl, -aryl, -aralkyl, -heteroaryl, -heterocyclyl, -C(O)O(alkyl), -OC(O)(alkyl), -C(O)NH_2, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl),or -SO_2NH_2;

each R^{10} is independently -H, -OH, -NH_2, -NH(alkyl), -N(alkyl)(alkyl), hydrocarbyl, -O-alkyl, -O-alkenyl, aryl, -O-aryl, aralkyl, -O--aralykl, heteroaryl, -O-heteroaryl, heterocyclyl, -O-heterocyclyl, halo, -OCF_3, -C(O)O(alkyl), -OC(O)(alkyl), -C(O)NH_2, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), NHC(O)(C_2-C_{10}-alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), -OC(O)NH_2, -OC(O)NH(alkyl), -

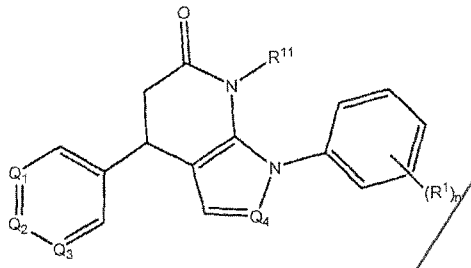
OC(O)N(alkyl)(alkyl), -CHNH, -CHN(alkyl), $-SO_2NH_2$, –S-alkyl, -S-aryl, -S-heteroaryl, -S-heterocycle, or –S- hydrocarbyl;

each of Q^1, Q^2, and Q^3 is independently CR^{10} or N;

X is CHR^{10}, S, O, or NR^9; and

each m is independently an integer from 0-3.

67. A compound of Formula (XIII):



(XIII)

or a pharmaceutically acceptable salt thereof, wherein

R^1 is is independently -H, -OH, $-NH_2$, -NH(alkyl), -N(alkyl)(alkyl), hydrocarbyl, -O-hydrocarbyl, aryl, -O-aryl, aralkyl, -O-aralykl, heteroaryl, -O-heteroaryl, heterocyclyl, -O-heterocyclyl, halo, $-OCF_3$, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), $-OC(O)NH_2$, -OC(O)NH(alkyl), -OC(O)N(alkyl)(alkyl), -CHNH, -CHN(alkyl), or $-SO_2NH_2$;

R^{11} is H, hydrocarbyl, aryl, aralkyl, heteroaryl, heterocyclyl, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), or $-SO_2NH_2$;

each of Q^1, Q^2, Q^3, and Q^4 is independently CR^{10} or N;

n is an integer from 1-4 and

each R^{10} is independently -H, -OH, $-NH_2$, -NH(alkyl), -N(alkyl)(alkyl), hydrocarbyl, -O-hydrocarbyl, aryl, -O-aryl, aralkyl, -O-aralykl, heteroaryl, -O-heteroaryl, heterocyclyl, -O-heterocyclyl, halo, $-OCF_3$, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), $-OC(O)NH_2$, -OC(O)NH(alkyl), -OC(O)N(alkyl)(alkyl), -CHNH, -CHN(alkyl), or $-SO_2NH_2$.

68. A composition comprising an effective amount of a compound or pharmaceutically acceptable salt of a compound of any one of claims 59-67 and a pharmaceutically acceptable vehicle or carrier.

69. The composition of claim 68, wherein the composition is formulated for oral administration.

70. The composition of claim 68, wherein the composition is in the form of a tablet or capsule.

71. The composition of claim 68, wherein the compound or salt thereof is present in an amount of about 1 mg to about 1,000 mg.

72. A method for treating or preventing a disorder of lipoprotein metabolism, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of any one of claims 59-67.

73. The method of claim 72, wherein the disorder of lipoprotein metabolism is dyslipidemia, dyslipoproteinemia, lipoprotein overproduction or deficiency, elevation of total cholesterol, elevation of low density lipoprotein concentration, elevation of triglyceride concentration, lipid elimination in bile, metabolic disorder, phospholipid elimination in bile, oxysterol elimination in bile, or peroxisome proliferator activated receptor-associated disorder.

74. A method of treating a disorder of glucose metabolism, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of any one of claims 59-65.

75. The method of claim 74, wherein the disorder of glucose metabolism is insulin resistance, impaired glucose tolerance, impaired fasting glucose levels in blood, diabetes mellitus, lipodystrophy, central obesity, peripheral lipoatrophy, diabetic nephropathy, diabetic retinopathy, renal disease, or speticemia.

76. A method of treating a cardiovascular disorder, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of any one of claims 59-67.

77. The method of claim 76, wherein the cardiovascular disorder or related vascular disorders is hypertension, coronary artery disease, myocardial infarcation, arrhythmia, atrial fibrillation, heart valve disease, heart failure, cardiomyopathy, or pericarditis.

78. The method of claim 76, wherein the method provides relief from at least one symptom of the cardiovascular disorder.

79. The method of claim 78, wherein the symptom is impotence.

80. A method of treating inflammation, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of any one of claims 59-67.

81. A method of treating ischemic necrosis, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of any one of claims 59-67.

82. A method of treating colon cancer, lung cancer, breast cancer, or skin cancer, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of any one of claims 59-67.

83. A method of treating a thrombotic disorder, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of any one of claims 59-67.

84. A method of treating Alzheimer's Disease, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of any one of claims 59-67.

85. A method of treating Parkinson's Disease, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of any one of claims 59-67.

86. A method of treating pancreatitis, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of any one of claims 59-67.

87. A method of treating pancreatitius, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of any one of claims 59-67.

88. A method of treating abnormal bile production, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of any one of claims 59-67.

89. A method of monitoring the progress of therapy for a cardiovascular disorder in a subject, the method comprising:

a. determining the level of free cholesterol in the high-density lipoprotein in the blood of the subject;

b. administering to the subject a compound of any one of claims 59-67;

c. monitoring the level of free cholesterol in the blood of the subject for a period of time after administration of the compound; and

d. evaluating the level of improvement in the subject based on a comparison of the results of steps a. and c.

90. The method of claim 89, wherein the cardiovascular disorder is reverse cholesterol transport from artery to liver or cholesterol elimination in bile acids.

91. A method of determining the level of P2Y13 activity in a subject, the method comprising:

a. determining the level of free cholesterol in the high-density lipoprotein in the blood of the subject;

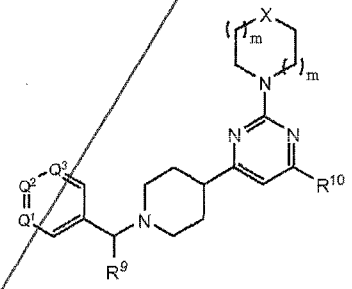
b. administering to the subject a compound of any one of claims 59-67;

c. monitoring the level of free cholesterol in the blood of the subject for a period of time after administration of the compound; and

d. evaluating the level of P2Y13 activity in the subject based on a comparison of the results of steps a. and c.

92. A method for treating or preventing a disorder, the method comprising administering to a subject in need thereof an effective amount of a compound or pharmaceutically acceptable salt of the compound of:

Formula X:



(X), wherein

each R^9 is independently -H, -hydrocarbyl, -aryl, -aralkyl, -heteroaryl, -heterocyclyl, -C(O)O(alkyl), -OC(O)(alkyl), -$C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl),or -SO_2NH_2;

each R^{10} is independently -H, -OH, -NH_2, -NH(alkyl), -N(alkyl)(alkyl), hydrocarbyl, -O-hydrocarbyl, aryl, -O-aryl, aralkyl, -O--aralykl, heteroaryl, -O-

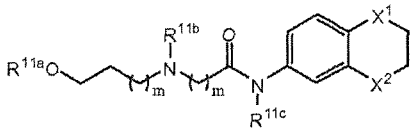
heteroaryl, heterocyclyl, -O-heterocyclyl, halo, $-OCF_3$, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), $-OC(O)NH_2$, -OC(O)NH(alkyl), -OC(O)N(alkyl)(alkyl), -CHNH, -CHN(alkyl), or $-SO_2NH_2$;

each of Q^1, Q^2, and Q^3 is independently CR^{10} or N;

X is CHR^{10}, S, O, or NR^9; and

each m is independently an integer from 0-3; or

Formula XI:



(XI), wherein

each of R^{11a}, R^{11b}, and R^{11c} is independently H, hydrocarbyl, aryl, aralkyl, heteroaryl, heterocyclyl, -C(O)(alkyl), -C(O)O(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), or $-SO_2NH_2$;

each of X^1 and X^2 is independently CHR^{10}, S, O, NR^9, or N-acyl;

each R^9 is independently H, hydrocarbyl, aryl, aralkyl, heteroaryl, heterocyclyl, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), or $-SO_2NH_2$;

each R^{10} is independently -H, -OH, $-NH_2$, -NH(alkyl), -N(alkyl)(alkyl), hydrocarbyl, -O-hydrocarbyl, aryl, -O-aryl, aralkyl, -O-aralykl, heteroaryl, -O-heteroaryl, heterocyclyl, -O-heterocyclyl, halo, $-OCF_3$, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), $-OC(O)NH_2$, -OC(O)NH(alkyl), -OC(O)N(alkyl)(alkyl), -CHNH, -CHN(alkyl), or $-SO_2NH_2$; and

each m is independently an integer from 0-3,

wherein the disorder is a disorder of lipoprotein metabolism, a disorder of glucose metabolism, a cardiovascular disorder, inflammation, ischemic necrosis, colon cancer, lung cancer, breast cancer, skin cancer, a thrombotic disorder, Alzheimer's Disease, Parkinson's Disease, pancreatitis, pancreatitius, or abnormal bile production.

93. The method of claim 90, wherein the disorder of lipoprotein metabolism is dyslipidemia, dyslipoproteinemia, lipoprotein overproduction or deficiency, elevation of total cholesterol, elevation of low density lipoprotein concentration, elevation of triglyceride concentration, lipid elimination in bile, metabolic disorder, phospholipid elimination in bile, oxysterol elimination in bile, or peroxisome proliferator activated receptor-associated disorder.

94. The method of claim 90, wherein the disorder of glucose metabolism is insulin resistance, impaired glucose tolerance, impaired fasting glucose levels in blood, diabetes mellitus, lipodystrophy, central obesity, peripheral lipoatrophy, diabetic nephropathy, diabetic retinopathy, renal disease, or speticemia.

95. The method of claim 90, wherein the cardiovascular disorder or related vascular disorders is hypertension, coronary artery disease, myocardial infarcation, arrhythmia, atrial fibrillation, heart valve disease, heart failure, cardiomyopathy, or pericarditis.

96. The method of claim 93, wherein the method provides relief from at least one symptom of the cardiovascular disorder.

97. The method of claim 94, wherein the symptom is impotence.

98. A method of monitoring the progress of therapy for a cardiovascular disorder in a subject, the method comprising:

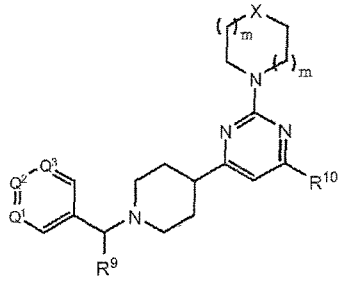
a. determining the level of free cholesterol in the high-density lipoprotein in the blood of the subject;

b. administering to the subject a compound or a pharmaceutically acceptable salt of a compound of either Formula X or Formula XI;

c. monitoring the level of free cholesterol in the blood of the subject for a period of time after administration of the compound; and

d. evaluating the level of improvement in the subject based on a comparison of the results of steps a. and c.,

wherein Formula X is:



(X), wherein

each R^9 is independently -H, -hydrocarbyl, -aryl, -aralkyl, -heteroaryl, -heterocyclyl, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl),or $-SO_2NH_2$;

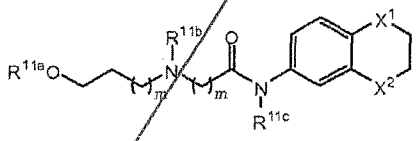
each R^{10} is independently -H, -OH, $-NH_2$, -NH(alkyl), -N(alkyl)(alkyl), hydrocarbyl, -O-hydrocarbyl, aryl, -O-aryl, aralkyl, -O--aralykl, heteroaryl, -O-heteroaryl, heterocyclyl, -O-heterocyclyl, halo, $-OCF_3$, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), $-OC(O)NH_2$, -OC(O)NH(alkyl), -OC(O)N(alkyl)(alkyl), -CHNH, -CHN(alkyl), or $-SO_2NH_2$;

each of Q^1, Q^2, and Q^3 is independently CR^{10} or N;

X is CHR^{10}, S, O, or NR^9; and

each m is independently an integer from 0-3; and

Formula XI is:



(XI), wherein

each of R^{11a}, R^{11b}, and R^{11c} is independently H, hydrocarbyl, aryl, aralkyl, heteroaryl, heterocyclyl, -C(O)(alkyl), -C(O)O(alkyl),, $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), or $-SO_2NH_2$;

each of X^1 and X^2 is independently CHR^{10}, S, O, NR^9, or N-acyl;

each R^9 is independently H, hydrocarbyl, aryl, aralkyl, heteroaryl, heterocyclyl, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), or $-SO_2NH_2$;

each R^{10} is independently -H, -OH, $-NH_2$, -NH(alkyl), -N(alkyl)(alkyl), hydrocarbyl, -O-hydrocarbyl, aryl, -O-aryl, aralkyl, -O-aralykl, heteroaryl, -O-heteroaryl, heterocyclyl, -O-heterocyclyl, halo, $-OCF_3$, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), $-OC(O)NH_2$, -OC(O)NH(alkyl), -OC(O)N(alkyl)(alkyl), -CHNH, -CHN(alkyl), or $-SO_2NH_2$; and

each m is independently an integer from 0-3.

99. The method of claim 96, wherein the cardiovascular disorder is reverse cholesterol transport from artery to liver or cholesterol elimination in bile acids.

100. A method of determining the level of P2Y13 activity in a subject, the method comprising:

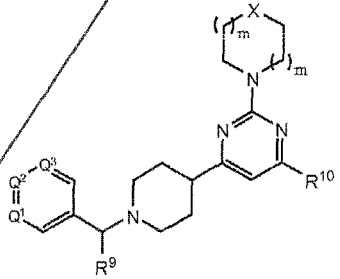
a. determining the level of free cholesterol in the high-density lipoprotein in the blood of the subject;

b. administering to the subject a compound or a pharmaceutically acceptable salt of a compound of either Formula X or Formula XI;

c. monitoring the level of free cholesterol in the blood of the subject for a period of time after administration of the compound; and

d. evaluating the level of P2Y13 activity in the subject based on a comparison of the results of steps a. and c.,

wherein Formula X is:



(X), wherein

each R^9 is independently -H, -hydrocarbyl, -aryl, -aralkyl, -heteroaryl, -heterocyclyl, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl),or $-SO_2NH_2$;

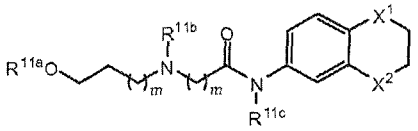
each R^{10} is independently -H, -OH, $-NH_2$, -NH(alkyl), -N(alkyl)(alkyl), hydrocarbyl, -O-hydrocarbyl, aryl, -O-aryl, aralkyl, -O--aralykl, heteroaryl, -O-heteroaryl, heterocyclyl, -O-heterocyclyl, halo, $-OCF_3$, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), $-OC(O)NH_2$, -OC(O)NH(alkyl), -OC(O)N(alkyl)(alkyl), -CHNH, -CHN(alkyl), or $-SO_2NH_2$;

each of Q^1, Q^2, and Q^3 is independently CR^{10} or N;

X is CHR^{10}, S, O, or NR^9; and

each m is independently an integer from 0-3; and

Formula XI is:



(XI), wherein

each of R^{11a}, R^{11b}, and R^{11c} is independently H, hydrocarbyl, aryl, aralkyl, heteroaryl, heterocyclyl, -C(O)(alkyl), -C(O)O(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), or $-SO_2NH_2$;

each of X^1 and X^2 is independently CHR^{10}, S, O, NR^9, or N-acyl;

each R^9 is independently H, hydrocarbyl, aryl, aralkyl, heteroaryl, heterocyclyl, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), or $-SO_2NH_2$;

each R^{10} is independently -H, -OH, $-NH_2$, -NH(alkyl), -N(alkyl)(alkyl), hydrocarbyl, -O-hydrocarbyl, aryl, -O-aryl, aralkyl, -O-aralykl, heteroaryl, -O-heteroaryl, heterocyclyl, -O-heterocyclyl, halo, $-OCF_3$, -C(O)O(alkyl), -OC(O)(alkyl), $-C(O)NH_2$, -C(O)NH(alkyl), -C(O)N(alkyl)(alkyl), -NHC(O)(alkyl), N(alkyl)C(O)(alkyl), -OC(O)O(alkyl), $-OC(O)NH_2$, -OC(O)NH(alkyl), -OC(O)N(alkyl)(alkyl), -CHNH, -CHN(alkyl), or $-SO_2NH_2$; and

each m is independently an integer from 0-3.

Brief Description of the Figures

[0024] FIGURE 1: Compound Va (dark triangle; top panel), Compound Ih (R-isomer) (dark triangle; middle panel) and Compound Ih (S-isomer) (dark triangle; middle