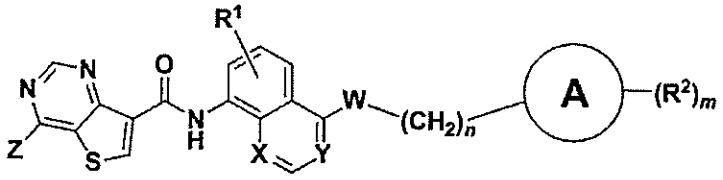
WHAT IS CLAIMED IS:

1. A thieno[3,2-d]pyrimidine derivative compound of formula (I) or a pharmaceutically acceptable salt thereof:



(I)

wherein,

A is C_{6-10} arylene or 5- to 10-membered heteroarylene;

W is O, NH or -NHNH-;

X and Y are each independently CH or N;

Z is hydrogen or NR^3R^4, wherein said R^3 and R^4 are each independently hydrogen, C_{1-6} alkyl or $-(CH_2)q-B$, B representing NR^5R^6 or C_{3-6} cycloalkyl;

R^1 is hydrogen or C_{1-3} alkyl, wherein said alkyl is unsubstituted or substituted with one or more halogen atoms;

each R^2 is independently hydrogen, halogen, $-CF_3$, -OH, -CN, C_{1-6} alkoxy, C_{1-6} alkyl, C_{2-4} alkynyl, $-NR^7R^8$, $-NHSO_2R^9$, $-SO_2R^{10}$, $-C(O)R^{11}$, $-NHC(O)R^{12}$, $-S(O)R^{14}$, 5- to 10-membered heterocycloalkyl, C_{6-10} aryloxy, or 5- to 10-membered heteroaryl, wherein said R^2 is connected to A by $-(CH_2)_p-$ or substituted with C_{1-4} alkyl, C_{2-4}alkynyl, or one or more halogen atoms;

R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12} and R^{14} are each independently hydrogen, $-NH_2$, C_{1-6} alkyl, C_{1-6} alkoxy or C_{3-6} cycloalkyl, said alkyl, alkoxy or cycloalkyl being unsubstituted or substituted with one or more halogen atoms;

q is 0;

p is an integer ranging from 0 to 1;

m is an integer ranging from 0 to 3; and

n is an integer ranging from 0 to 1.

2. The thieno[3,2-d]pyrimidine derivative compound or a pharmaceutically acceptable salt

thereof of claim 1, wherein W is NH.

3. The thieno[3,2-d]pyrimidine derivative compound or a pharmaceutically acceptable salt thereof of claim 1, wherein Z is NR^3R^4.

4. The thieno[3,2-d]pyrimidine derivative compound or a pharmaceutically acceptable salt thereof of claim 1, wherein X is CH and Y is N.

5. The thieno[3,2-d]pyrimidine derivative compound or a pharmaceutically acceptable salt thereof of claim 1, wherein W is NH, Z is NR^3R^4, X is CH and Y is N.

6. A thieno[3,2-d]pyrimidine derivative compound or a pharmaceutically acceptable salt thereof, which is selected from the group consisting of:

1) 4-amino-N-(1-((4-chlorophenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

2) 4-amino-N-(6-methyl-1-((3-(trifluoromethyl)phenyl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

3) N-(1-((4-chlorophenyl)amino)-6-methylisoquinolin-5-yl)-4-(cyclopropylamino)thieno[3,2-d]pyrimidine-7-carboxamide;

4) 4-(cyclopropylamino)-N-(6-methyl-1-((3-(trifluoromethyl)phenyl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

5) 4-amino-N-(6-methyl-1-((3-(4-methyl-1H-imidazol-1-yl)-5-(trifluoromethyl)phenyl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

6) 4-(cyclopropylamino)-N-(6-methyl-1-((3-(4-methyl-1H-imidazol-1-yl)-5-(trifluoromethyl)phenyl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

7) 4-amino-N-(1-((4-((4-ethylpiperazin-1-yl)methyl)-3-(trifluoromethyl)phenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

8) 4-(cyclopropylamino)-N-(1-((4-((4-ethylpiperazin-1-yl)methyl)-3-(trifluoromethyl)phenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

9) N-(1-((4-((4-ethylpiperazin-1-yl)methyl)-3-(trifluoromethyl)phenyl)amino)-6-methylisoquinolin-5-yl)-4-(methylamino)thieno[3,2-d]pyrimidine-7-carboxamide;

10) 4-amino-N-(1-((4-(4-ethylpiperazin-1-yl)phenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

11) 4-amino-N-(1-((4-((4-ethylpiperazin-1-yl)methyl)phenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

12) 4-amino-N-(6-methyl-1-((3-(trifluoromethyl)phenyl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

13) 4-amino-N-(1-((4-chloro-3-(trifluoromethyl)phenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

14) 4-amino-N-(1-((2-methoxy-5-(trifluoromethyl)phenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

15) 4-amino-N-(6-methyl-1-((4-(trifluoromethyl)phenyl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

16) 4-amino-N-(1-((4-methoxyphenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

17) 4-amino-N-(6-methyl-1-(p-tolylamino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

18) 4-amino-N-(1-((4-isopropylphenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

19) 4-amino-N-(1-((5-(t-butyl)isoxazol-3-yl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

20) 4-amino-N-(1-((4-fluorophenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

21) 4-amino-N-(6-methyl-1-(thiazol-2-ylamino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

22) 4-amino-N-(1-((4-cyanophenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

23) 4-amino-N-(6-methyl-1-(quinolin-5-ylamino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

24) 4-amino-N-(1-((4-ethoxyphenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-

d]pyrimidine-7-carboxamide;

25) 4-amino-N-(6-methyl-1-((4-phenoxyphenyl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

26) 4-amino-N-(1-((4-hydroxyphenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

27) 4-amino-N-(1-((4-isopropoxyphenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

28) 4-amino-N-(1-((4-(dimethylamino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

30) 4-amino-N-(1-((3,4-dimethoxyphenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

31) 4-amino-N-(1-((3-fluoro-4-methoxyphenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

32) 4-amino-N-(6-methyl-1-((3,4,5-trimethoxyphenyl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

36) 4-amino-N-(4-((4-chlorophenyl)amino)-7-methylquinazolin-8-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

37) 4-(cyclopropylamino)-N-(1-((4-methoxyphenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

38) 4-amino-N-(1-((3-chlorophenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

39) 4-amino-N-(1-((3-bromophenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

40) 4-amino-N-(1-((2,4-dichlorophenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

41) 4-amino-N-(1-((3,4-dichlorophenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

42) 4-amino-N-(1-((3,5-dichlorophenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

43) 4-amino-N-(6-methyl-1-((3,4,5-trichlorophenyl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

44) 4-amino-N-(1-((4-chloro-3-methoxyphenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

45) 4-amino-N-(1-benzylamino-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

46) 4-amino-N-(6-methyl-1-phenoxyisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

47) 4-amino-N-(6-methyl-1-((4-morpholinophenyl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

48) N-(1-((4-(1H-pyrrol-1-yl)phenyl)amino)-6-methylisoquinolin-5-yl)-4-aminothieno[3,2-d]pyrimidine-7-carboxamide;

49) 4-amino-N-(6-methyl-1-(pyrimidin-4-ylamino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

50) 4-amino-N-(1-((4-(difluoromethoxy)phenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

51) 4-amino-N-(6-methyl-1-((4-(trifluoromethoxy)phenyl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

52) 4-amino-N-(1-((4-chlorophenyl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

53) 4-amino-N-(5-((4-chlorophenyl)amino)naphthalen-1-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

54) 4-amino-N-(1-((4-ethynylphenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

57) 4-amino-N-(1-((4-(fluoromethoxy)phenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

58) N-(1-(4-chlorophenylamino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

59) 4-amino-N-(1-((4-chloro-3-((dimethylamino)methyl)phenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

60) 4-amino-N-(1-((4-chloro-3-(pyrrolidin-1-ylmethyl)phenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

61) 4-amino-N-(1-((4-chloro-3-((diethylamino)methyl)phenyl)amino)-6-

methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

63) 4-amino-N-(1-((4-chloro-3-(piperidin-1-ylmethyl)phenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

64) 4-amino-N-(1-((4-chloro-3-(morpholinomethyl)phenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

65) 4-amino-N-(1-((4-chloro-3-((4-methylpiperazin-1-yl)methyl)phenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

66) 4-amino-N-(1-((4-chloro-3-((diisopropylamino)methyl)phenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

67) 4-amino-N-(6-methyl-1-((3-(methylsulfonamido)phenyl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

68) tert-butyl 4-(5-((5-(4-aminothieno[3,2-d]pyrimidine-7-carboxamido)-6-methylisoquinolin-1-yl)amino)-2-chlorobenzyl)piperazine-1-carboxylate;

69) 4-amino-N-(1-((4-chloro-3-(piperazin-1-ylmethyl)phenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

70) 4-amino-N-(1-((3-chloro-4-methoxyphenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

73) 4-amino-N-(1-((4-chloro-2-fluorophenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

74) 4-amino-N-(1-((4-bromo-2-fluorophenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

75) 4-amino-N-(1-((4-methoxybenzyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

76) 4-amino-N-(1-((4-chlorobenzyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

77) 4-amino-N-(1-(2-(4-chlorophenyl)hydrazinyl)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

78) 4-amino-N-(1-((3-((dimethylamino)methyl)phenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

79) 4-amino-N-(6-methyl-1-((4-oxo-4H-chromen-6-yl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

80) N-(1-((3-acetylphenyl)amino)-6-methylisoquinolin-5-yl)-4-aminothieno[3,2-d]pyrimidine-7-carboxamide;

82) 4-amino-N-(6-methyl-1-((3-(trifluoromethoxy)phenyl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

83) N-(1-((4-acetylphenyl)amino)-6-methylisoquinolin-5-yl)-4-aminothieno[3,2-d]pyrimidine-7-carboxamide;

84) 4-amino-N-(6-methyl-1-((4-(methylsulfonamido)phenyl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

85) 4-amino-N-(6-methyl-1-((3-(methylsulfonyl)phenyl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

86) 4-amino-N-(1-((4-chloro-3-(methoxymethyl)phenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

87) 4-amino-N-(1-((4-methoxy-3-(methylsulfonamido)phenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

88) 4-amino-N-(1-((4-chloro-3-(methylsulfonamido)phenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

89) 4-amino-N-(1-((6-chloropyridin-3-yl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

90) 4-amino-N-(1-((2-chloropyridin-4-yl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

91) 4-amino-N-(6-methyl(4-(methylsulfonamidomethyl)phenyl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

92) 4-amino-N-(6-methyl-1-((3-(methylsulfonamidomethyl)phenyl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

93) 4-amino-N-(1-((4-chloro-3-fluorophenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

94) 4-amino-N-(1-((3-bromo-4-chlorophenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

96) N-(1-((3-acetamidophenyl)amino)-6-methylisoquinolin-5-yl)-4-aminothieno[3,2-d]pyrimidine-7-carboxamide;

97) 4-amino-N-(6-methyl-1-((1-methyl-1H-indazol-6-yl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

98) 4-amino-N-(6-methyl-1-((4-(methylsulfinyl)phenyl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

99) 4-amino-N-(6-methyl-1-((2-methyl-1,3-dioxoisoindolin-5-yl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

100) 4-amino-N-(1-((6-methoxypyridin-3-yl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

101) 4-amino-N-(6-methyl-1-((3-(2,2,2-trifluoroacetyl)phenyl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

102) 4-amino-N-(6-methyl-1-((4-propionylphenyl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

103) 4-amino-N-(1-((4-hexanoylphenyl)amino)-6-methylisoquinolin-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

104) N-(1-((1-acetyl-1H-indazol-6-yl)amino)-6-methylisoquinolin-5-yl)-4-aminothieno[3,2-d]pyrimidine-7-carboxamide;

105) 4-amino-N-(1-((3-chloro-4-fluorophenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

107) 4-amino-N-(6-methyl-1-((2-methyl-2H-indazol-6-yl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

108) methyl 4-((5-(4-aminothieno[3,2-d]pyrimidine-7-carboxamido)-6-methylisoquinolin-1-yl)amino)benzoate;

109) 4-amino-N-(6-methyl-1-((1-methyl-1H-indazol-5-yl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

110) 4-amino-N-(6-methyl-1-((2-methyl-2H-indazol-5-yl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

111) 4-amino-N-(6-methyl-1-((6-methylpyridin-3-yl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

112) 4-amino-N-(6-methyl-1-((1-methyl-1H-indol-6-yl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

113) tert-butyl 6-((5-(4-aminothieno[3,2-d]pyrimidine-7-carboxamido)-6-

methylisoquinolin-1-yl)amino)-1H-indazol-1-carboxylate;

114) N-(1-((1H-indazol-6-yl)amino)-6-methylisoquinolin-5-yl)-4-aminothieno[3,2-d]pyrimidine-7-carboxamide hydrochloride;

115) 4-amino-N-(1-((5-chloro-2-fluorophenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

116) 4-amino-N-(1-((3-chloro-2-fluorophenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

117) 4-amino-N-(1-((3-fluoro-4-(4-methylpiperazin-1-yl)phenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

118) 4-amino-N-(1-((3-chloro-1-methyl-1H-indazol-6-yl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

119) 4-amino-N-(6-methyl-1-((4-(prop-2-yn-1-yloxy)phenyl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

120) 4-amino-N-(1-((2-methoxy-4-morpholinophenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

121) 4-amino-N-(1-(benzo[d]thiazol-6-ylamino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

122) N-(1-((1H-indazol-5-yl)amino)-6-methylisoquinolin-5-yl)-4-aminothieno[3,2-d]pyrimidine-7-carboxamide; and

123) 4-amino-N-(1-((3-chloro-2,4-difluorophenyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide.

7. A pharmaceutical composition comprising the compound of any one of claims 1 to 6, or a pharmaceutically acceptable salt thereof, as an active ingredient and a pharmaceutically acceptable carrier, excipient or additive.

8. The pharmaceutical composition of claim 7, wherein the pharmaceutical composition further comprises a drug selected from the group consisting of cell signal transduction inhibitors, mitosis inhibitors, alkylating agents, antimetabolites, antibiotics, growth factor inhibitors, cell cycle inhibitors, topoisomerase inhibitors, biological reaction modifiers, antihormonal agents, antiandrogen, cell differentiation/proliferation/survival inhibitors,

apoptosis inhibitors, inflammation inhibitors and P-glycoprotein inhibitors.

9. The pharmaceutical composition of claim 8 wherein the drug is a cell signal transduction inhibitor.

10. The pharmaceutical composition of any one of claims 7 to 9, wherein said composition is an oral composition.

11. The pharmaceutical composition of any one of claims 7 to 10, wherein said composition is in the form of a tablet, a pill, powder, a capsule, syrup, an emulsion or a microemulsion.

12. A use of the compound of any one of claims 1 to 6, or a pharmaceutically acceptable salt thereof, for the manufacture of a medicament for preventing or treating disease caused by abnormal activation of a protein kinase.

13. The use of claim 12, wherein said protein kinase is selected from the group consisting of: ALK, AMPK, Aurora A, Aurora B, Aurora C, Axl, Blk, Bmx, BTK, CaMK, CDK2/cyclinE, CDK5/p25, CHK1, CK2, c-RAF, DDR1, DDR2, DMPK, EGFR1, Her2, Her4, EphA1, EphB1, FAK, FGFR2, FGFR3, FGFR4, Flt-1, Flt-3, Flt-4, Fms (CSF-1), Fyn, GSK3beta, HIPK1, IKKbeta, IGFR-1R, IR, Itk, JAK2, JAK3, KDR, Kit, Lck, Lyn, MAPK1, MAPKAP-K2, MEK1, Met, MKK6, MLCK, NEK2, p70S6K, PAK2, PDGFR alpha, PDGFR beta, PDK1, Pim-1, PKA, PKBalpha, PKCalpha, Plk1, Ret, ROCK-I, Rsk1, SAPK2a, SGK, Src, Syk, Tie-2, Tec, Trk and ZAP-70.

14. The use of claim 12 or 13, wherein said disease is selected from the group consisting of: gastric cancer, lung cancer, liver cancer, colorectal cancer, small intestine cancer, pancreatic cancer, brain cancer, bone cancer, melanoma, breast cancer, sclerosing adenosis, uterine cancer, cervical cancer, head and neck cancer, esophagus cancer, thyroid cancer, parathyroid cancer, renal cancer, sarcoma, prostate cancer, urethral cancer, bladder cancer, blood cancer, lymphoma, fibroadenoma, inflammation, diabetes, obesity, psoriasis, rheumatoid arthritis, hemangioma, acute or chronic kidney disease, coronary restenosis, autoimmune diseases,

asthma, neurodegenerative diseases, acute infection or ocular diseases caused by angiogenesis.

15. A thieno[3,2-d]pyrimidine derivative compound or a pharmaceutically acceptable salt thereof, which is selected from the group consisting of:

29) 4-amino-N-(l-((2,3-dihydrobenzo[b][l ,4]dioxin-6-yl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

33) 4-amino-N-(6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

34) 4-amino-N-(l-(benzo[d][l ,3]dioxol-5-ylamino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

35) 4-amino-N-(6-methyl-1-((5,6,7,8-tetrahydronaphthalen-2-yl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

55) 4-amino-N-(l -(isopropylamino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

56) 4-amino-N-(l-(indolin-6-ylamino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

62) 4-amino-N-(l -((1,4-diethyl-l ,2,3, 4-tetrahydroquinoxalin-6-yl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

71) 4-amino-N-(1-((3-(dimethylcarbamoyl)phenyl)amino)-6- methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

72) 4-amino-N-(6-methyl-l-((3-(methylcarbamoyl)phenyl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

81) 4-amino-N-(1-((4-(2-methoxyethoxy)phenyl)amino)-6- methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

95) 4-amino-N-(1-((4-(dimethylcarbamoyl)phenyl)amino)-6- methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

106) 4-amino-N-(6-methyl-l -((5-oxo-5,6,7,8-tetrahydronaphthalen-2-yl)amino)isoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide;

124) 4-amino-N-(1-((3-(dimethylamino)propyl)amino)-6-methylisoquinolin-5-yl)thieno[3,2-d]pyrimidine-7-carboxamide; and

125) 4-amino-N-(6-methyl-1-(piperidin-l-yl)isoquinolin-5-yl)thieno[3 ,2-d]pyrimidine-7-carboxamide.

16. A pharmaceutical composition comprising the compound of claim 15, or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier, excipient or additive.

17. The pharmaceutical composition of claim 16, wherein the pharmaceutical composition further comprises a drug selected from the group consisting of cell signal transduction inhibitors, mitosis inhibitors, alkylating agents, antimetabolites, antibiotics, growth factor inhibitors, cell cycle inhibitors, topoisomerase inhibitors, biological reaction modifiers, antihormonal agents, antiandrogen, cell differentiation/proliferation/survival inhibitors, apoptosis inhibitors, inflammation inhibitors and P-glycoprotein inhibitors.

18. The pharmaceutical composition of claim 17 wherein the drug is a cell signal transduction inhibitor.

19. The pharmaceutical composition of any one of claims 16 to 18, wherein said composition is an oral composition.

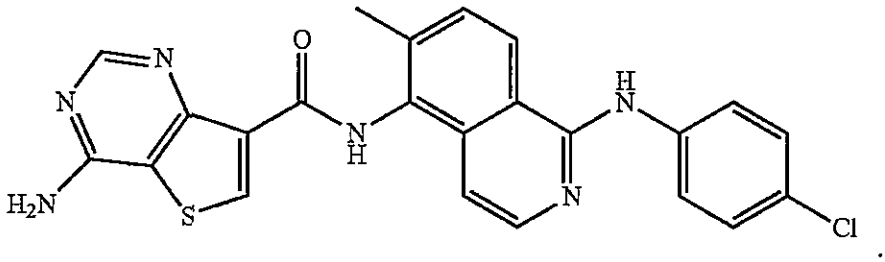
20. The pharmaceutical composition of any one of claims 16 to 19, wherein said composition is in the form of a tablet, a pill, powder, a capsule, syrup, an emulsion or a microemulsion.

21. A use of the compound of claim 15, or a pharmaceutically acceptable salt thereof, for the manufacture of a medicament for preventing or treating disease caused by abnormal activation of a protein kinase.

22. The use of claim 21, wherein said protein kinase is selected from the group consisting of: ALK, AMPK, Aurora A, Aurora B, Aurora C, Axl, Blk, Bmx, BTK, CaMK, CDK2/cyclinE, CDK5/p25, CHK1, CK2, c-RAF, DDR1, DDR2, DMPK, EGFR1, Her2, Her4, EphA1, EphB1, FAK, FGFR2, FGFR3, FGFR4, Flt-1, Flt-3, Flt-4, Fms (CSF-1), Fyn, GSK3beta, HIPK1, IKKbeta, IGFR-1R, IR, Itk, JAK2, JAK3, KDR, Kit, Lck, Lyn, MAPK1, MAPKAP-K2, MEK1, Met, MKK6, MLCK, NEK2, p70S6K, PAK2, PDGFR alpha, PDGFR beta, PDK1, Pim-1, PKA, PKBalpha, PKCalpha, Plk1, Ret, ROCK-I, Rsk1, SAPK2a, SGK, Src, Syk, Tie-2, Tec, Trk and ZAP-70.

23. The use of claim 21 or 22, wherein said disease is selected from the group consisting of: gastric cancer, lung cancer, liver cancer, colorectal cancer, small intestine cancer, pancreatic cancer, brain cancer, bone cancer, melanoma, breast cancer, sclerosing adenosis, uterine cancer, cervical cancer, head and neck cancer, esophagus cancer, thyroid cancer, parathyroid cancer, renal cancer, sarcoma, prostate cancer, urethral cancer, bladder cancer, blood cancer, lymphoma, fibroadenoma, inflammation, diabetes, obesity, psoriasis, rheumatoid arthritis, hemangioma, acute or chronic kidney disease, coronary restenosis, autoimmune diseases, asthma, neurodegenerative diseases, acute infection or ocular diseases caused by angiogenesis.

24. A thieno[3,2-d]pyrimidine derivative compound, or a pharmaceutically acceptable salt thereof, of the following structure:

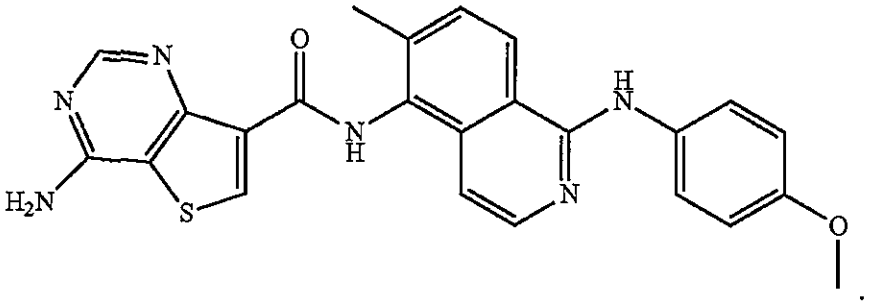


25. A pharmaceutical composition comprising the thieno[3,2-d]pyrimidine derivative compound of claim 24, or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable excipient.

26. Use of the compound of claim 24 for the manufacture of a medicament for treating cancer, wherein the cancer is lung cancer, pancreatic cancer, colorectal cancer, or liver cancer.

27. The use of claim 26 wherein the medicament further comprises a cell signal transduction inhibitor.

28. A thieno[3,2-d]pyrimidine derivative compound, or a pharmaceutically acceptable salt thereof, of the following structure:

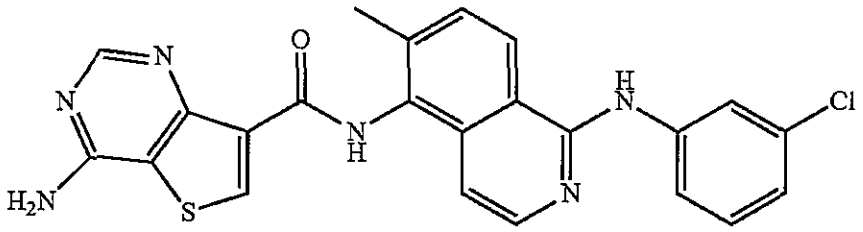


29. A pharmaceutical composition comprising the thieno[3,2-d]pyrimidine derivative compound of claim 28, or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable excipient.

30. Use of the compound of claim 28 for the manufacture of a medicament for treating cancer, wherein the cancer is lung cancer, pancreatic cancer, colorectal cancer, or liver cancer.

31. The use of claim 30 wherein the medicament further comprises a cell signal transduction inhibitor.

32. A thieno[3,2-d]pyrimidine derivative compound, or a pharmaceutically acceptable salt thereof, of the following structure:

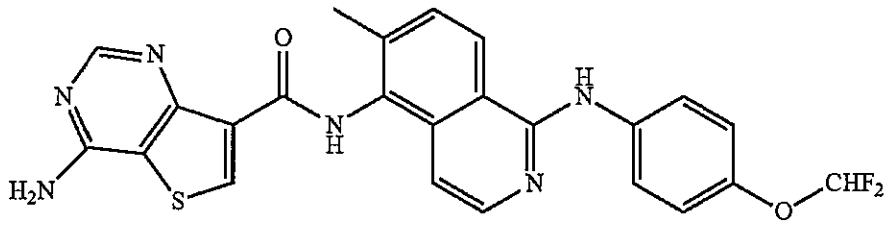


33. A pharmaceutical composition comprising the thieno[3,2-d]pyrimidine derivative compound of claim 32, or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable excipient.

34. Use of the compound of claim 32 for the manufacture of a medicament for treating cancer, wherein the cancer is lung cancer, pancreatic cancer, colorectal cancer, or liver cancer.

35. The use of claim 34 wherein the medicament further comprises a cell signal transduction inhibitor.

36. A thieno[3,2-d]pyrimidine derivative, or a pharmaceutically acceptable salt thereof, of the following structure:

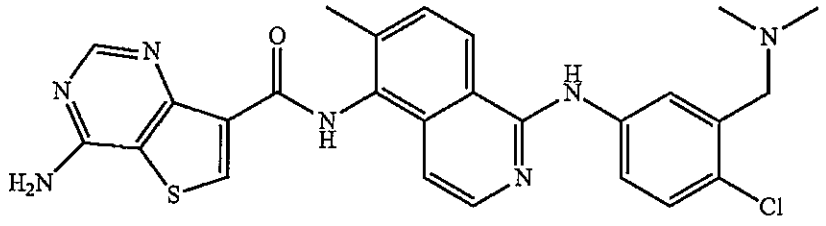


37. A pharmaceutical composition comprising the thieno[3,2-d]pyrimidine derivative compound of claim 36, or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable excipient.

38. Use of the compound of claim 36 for the manufacture of a medicament for treating cancer, wherein the cancer is lung cancer, pancreatic cancer, colorectal cancer, or liver cancer.

39. The use of claim 38 wherein the medicament further comprises a cell signal transduction inhibitor.

40. A thieno[3,2-d]pyrimidine derivative, or a pharmaceutically acceptable salt thereof, of the following structure:

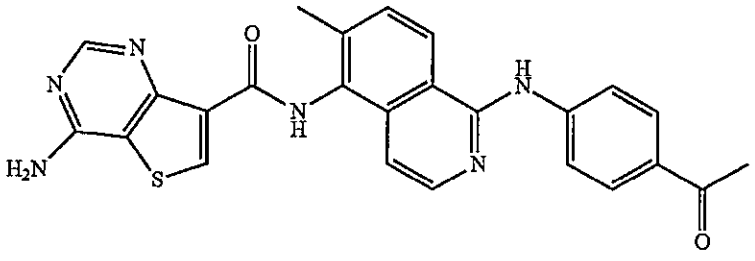


41. A pharmaceutical composition comprising the thieno[3,2-d]pyrimidine derivative compound of claim 40, or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable excipient.

42. Use of the compound of claim 40 for the manufacture of a medicament for treating cancer, wherein the cancer is lung cancer, pancreatic cancer, colorectal cancer, or liver cancer.

43. The use of claim 42 wherein the medicament further comprises a cell signal transduction inhibitor.

44. A thieno[3,2-d]pyrimidine derivative, or a pharmaceutically acceptable salt thereof, of the following structure:

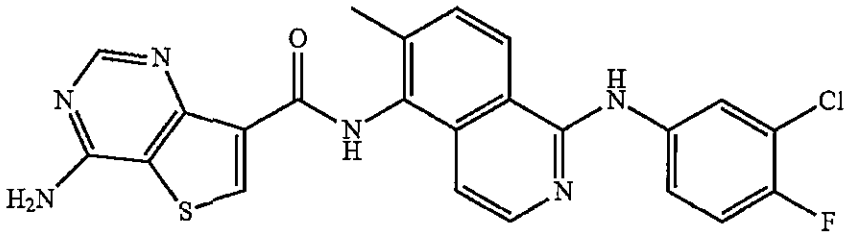


45. A pharmaceutical composition comprising the thieno[3,2-d]pyrimidine derivative compound of claim 44, or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable excipient.

46. Use of the compound of claim 44 for the manufacture of a medicament for treating cancer, wherein the cancer is lung cancer, pancreatic cancer, colorectal cancer, or liver cancer.

47. The use of claim 46 wherein the medicament further comprises a cell signal transduction inhibitor.

48. A thieno[3,2-d]pyrimidine derivative, or a pharmaceutically acceptable salt thereof, of the following structure:

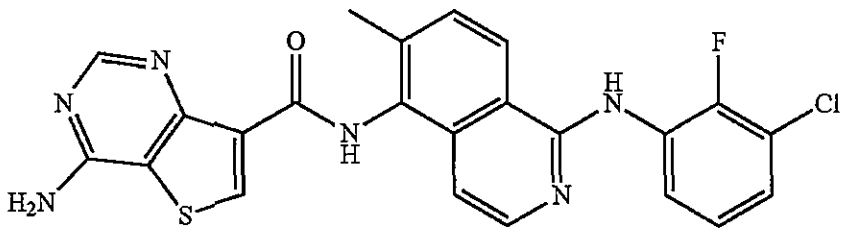


49. A pharmaceutical composition comprising the thieno[3,2-d]pyrimidine derivative compound of claim 48, or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable excipient.

50. Use of the compound of claim 48 for the manufacture of a medicament for treating cancer, wherein the cancer is lung cancer, pancreatic cancer, colorectal cancer, or liver cancer.

51. The use of claim 50 wherein the medicament further comprises a cell signal transduction inhibitor.

52. A thieno[3,2-d]pyrimidine derivative, or a pharmaceutically acceptable salt thereof, of the following structure:

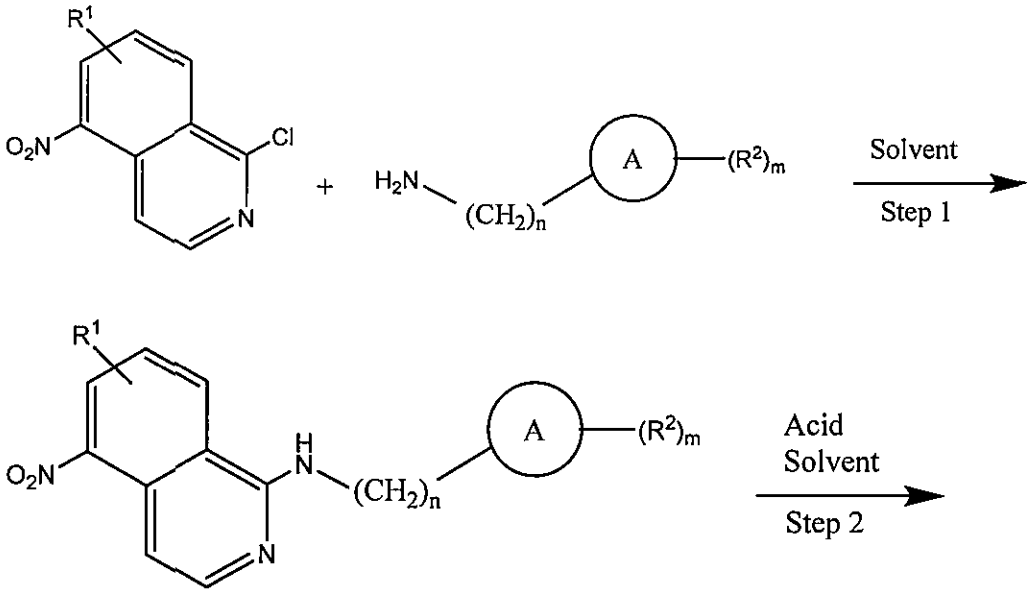


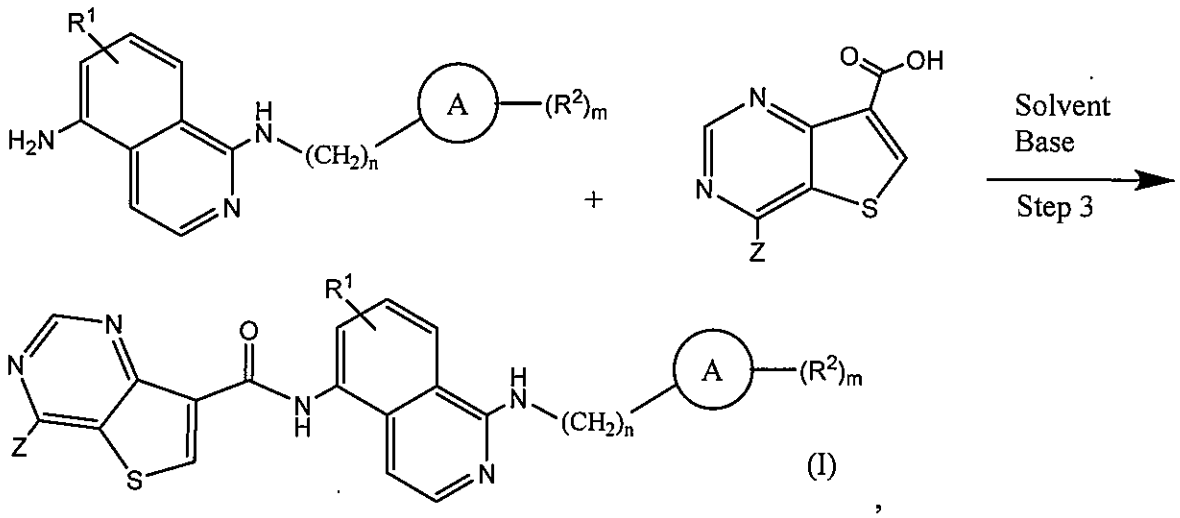
53. A pharmaceutical composition comprising the thieno[3,2-d]pyrimidine derivative compound of claim 52, or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable excipient.

54. Use of the compound of claim 52 for the manufacture of a medicament for treating cancer, wherein the cancer is lung cancer, pancreatic cancer, colorectal cancer, or liver cancer.

55. The use of claim 54 wherein the medicament further comprises a cell signal transduction inhibitor.

56. A method of preparing a thieno[3,2-d]pyrimidine compound of formula (I) or a pharmaceutically acceptable salt thereof, the method comprising reaction steps 1 to 3:





wherein:

A is C_{6-10} arylene or 5- to 10-membered heteroarylene;

Z is hydrogen or NR^3R^4, wherein said R^3 and R^4 are each independently hydrogen, C_{1-6} alkyl or -$(CH_2)_q$-B, B representing NR^5R^6 or C_{3-6} cycloalkyl;

R^1 is hydrogen or C_{1-3} alkyl, wherein said alkyl is unsubstituted or substituted with one or more halogen atoms;

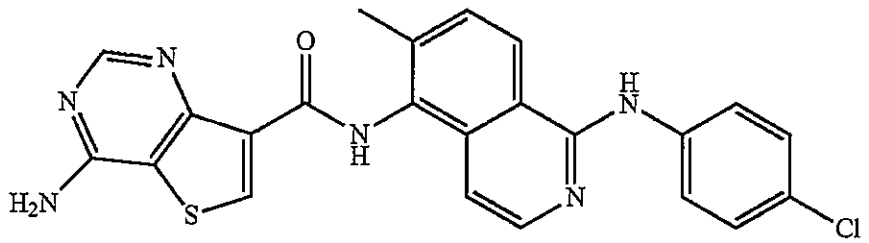
each R^2 is independently hydrogen, halogen, -CF_3, -OH, -CN, C_{1-6} alkoxy, C_{1-6} alkyl, C_{2-4} alkynyl, -NR^7R^8, -$NHSO_2R^9$, -SO_2R^{10}, -$C(O)R^{11}$, -$NHC(O)R^{12}$, -$S(O)R^{14}$, 5- to 10-membered heterocycloalkyl, C_{6-10} aryloxy, or 5- to 10-membered heteroaryl, wherein said R^2 is connected to A by -$(CH_2)_p$- or substituted with C_{1-4} alkyl, C_{2-4}alkynyl, or one or more halogen atoms;

R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12} and R^{14} are each independently hydrogen, -NH_2, C_{1-6} alkyl, C_{1-6} alkoxy or C_{3-6} cycloalkyl, said alkyl, alkoxy or cycloalkyl being unsubstituted or substituted with one or more halogen atoms;

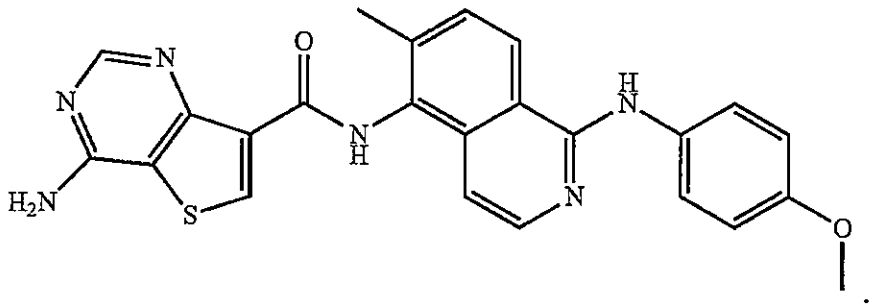
m is an integer ranging from 0 to 3; and

n is 0 or 1.

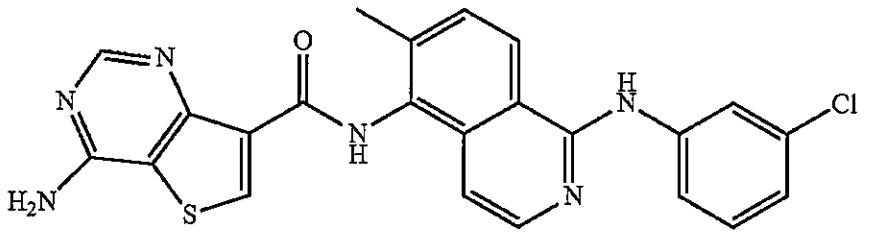
57. The method of claim 56 wherein the formula (I) compound, or a pharmaceutically acceptable salt thereof, is of the structure:



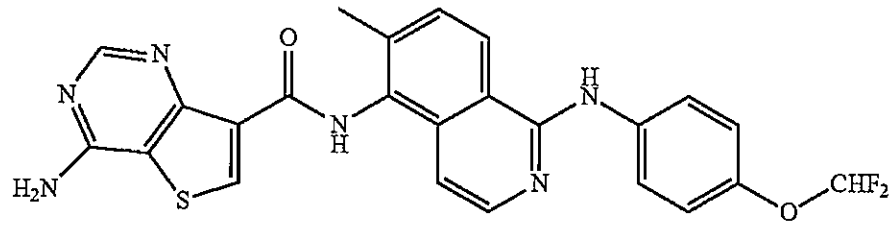
58. The method of claim 56 wherein the formula (I) compound, or a pharmaceutically acceptable salt thereof, is of the structure:



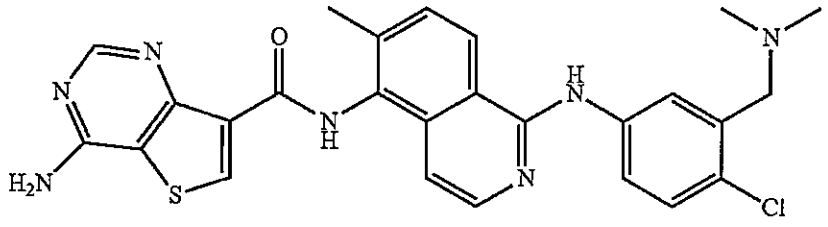
59. The method of claim 56 wherein the formula (I) compound, or a pharmaceutically acceptable salt thereof, is of the structure:



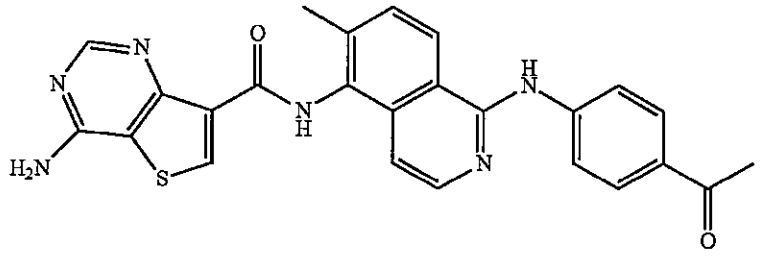
60. The method of claim 56 wherein the formula (I) compound, or a pharmaceutically acceptable salt thereof, is of the structure:



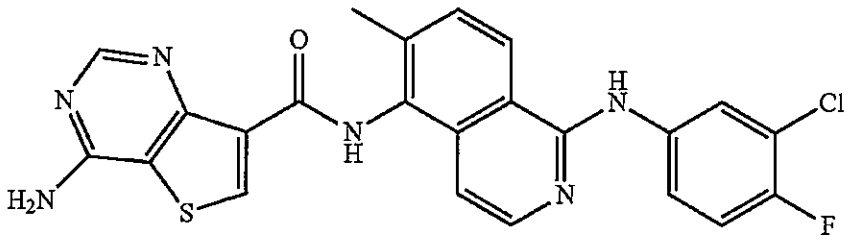
61. The method of claim 56 wherein the formula (I) compound, or a pharmaceutically acceptable salt thereof, is of the structure:



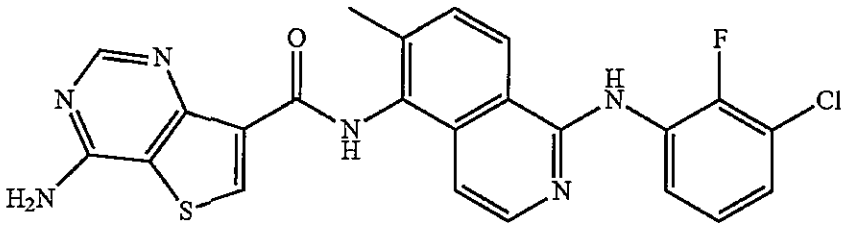
62. The method of claim 56 wherein the formula (I) compound, or a pharmaceutically acceptable salt thereof, is of the structure:



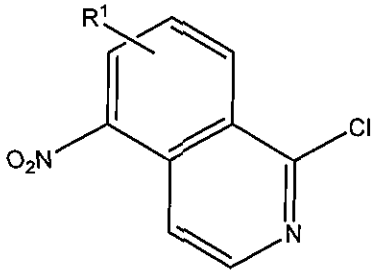
63. The method of claim 56 wherein the formula (I) compound, or a pharmaceutically acceptable salt thereof, is of the structure:



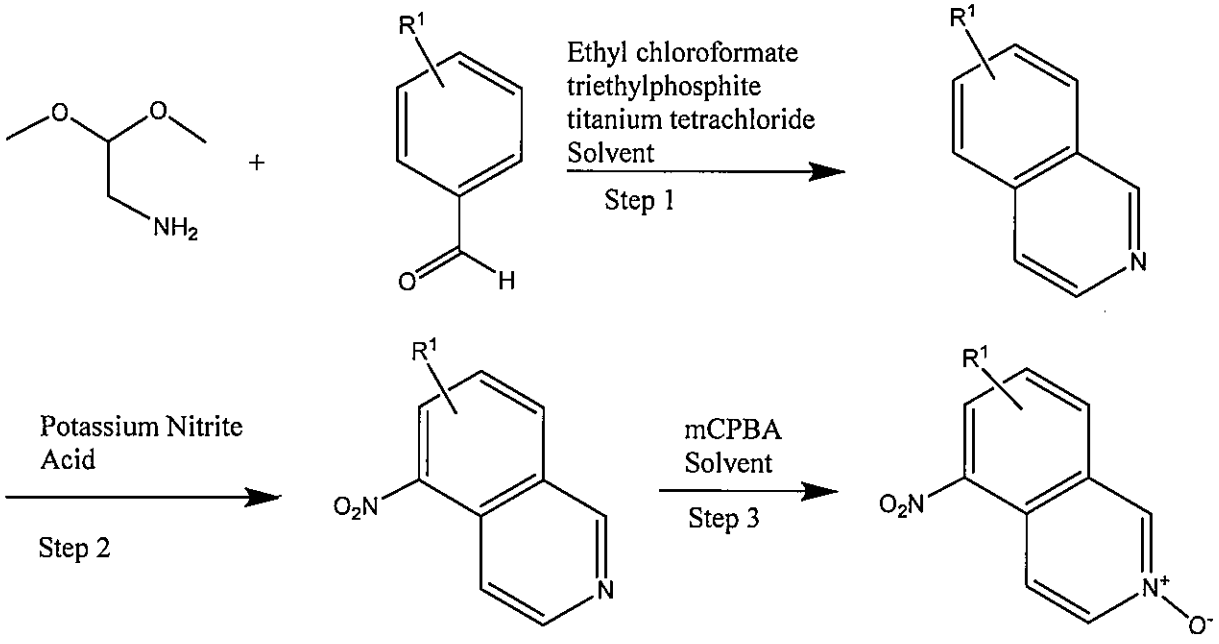
64. The method of claim 56 wherein the formula (I) compound, or a pharmaceutically acceptable salt thereof, is of the structure:

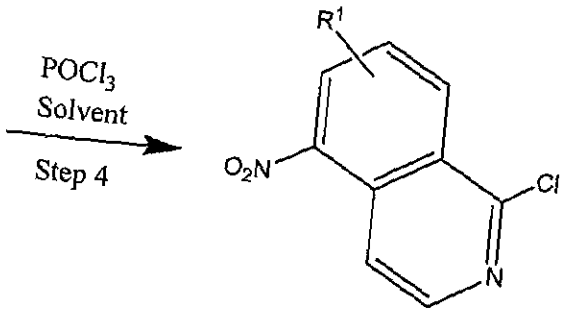
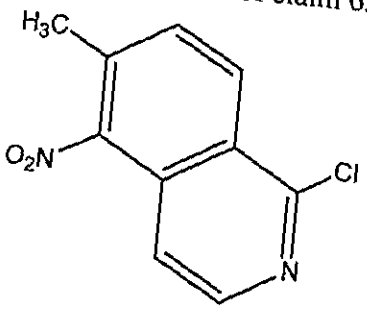


65. A method for preparing the following compound, or a salt thereof,



wherein R^1 is H or C_{1-3} alkyl, the method comprising the following steps:





66. The method of claim 65 wherein the product of step 4 is: