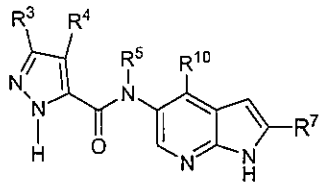
CLAIMS

1. A compound having Formula (IVa-2):



(IVa-2)

or a pharmaceutically acceptable salt, a solvate, a tautomer, a stereoisomer, or a deuterated analog thereof, wherein:

R^7 is halogen, -CN, C_{1-6}alkyl, C_{1-6}alkoxy, C_{2-6}alkenyl, C_{2-6} alkynyl, C_{3-6} cycloalkyl, C_{3-6} cycloalkyl-C_{1-4}alkyl, aryl, aryl-C_{1-4}alkyl, heteroaryl, heteroaryl-C_{1-4} alkyl, heterocyclyl, heterocyclyl-C_{1-4}alkyl, -C(O)-R^a, -C(O)NHR^a, -C(O)NR^{a}R^a, -NHC(O)R^a, -NHC(O)NHR^a, -NHC(O)NR^{a}R^a, -NR^{a}R^a, -NHR^a, -C(O)OR^a, -OC(O)R^a, -SO_2R^a, -NHSO_2R^a, -NHSO_2NHR^a, -NHSO_2NR^{a}R^a, -SO_2NHR^a, or -SO_2NR^{a}R^a;

each R^a is independently selected from C_{1-6}alkyl, aryl, aryl-C_{1-2}alkyl, C_{3-6}cycloalkyl, C_{3-6}cycloalkyl-C_{1-4}alkyl, heteroaryl, heteroaryl-C_{1-4}alkyl, heterocycloalkyl, and heterocycloalkyl-C_{1-4}alkyl;

wherein each R^a is further optionally substituted with 1-3 R^b substituents independently selected from C_{1-6}alkyl, C_{1-6}alkoxy, halogen, C_{1-6} haloalkyl, and C_{1-6} haloalkoxy;

R^7 is optionally substituted with from 1-4 R^9 members selected from halogen, -CN, C_{1-6}alkyl, C_{1-6}alkoxy, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, C_{3-6}cycloalkyl, C_{3-6} cycloalkyl-C_{1-4}alkyl, aryl, aryl-C_{1-4}alkyl, heteroaryl, heteroaryl-C_{1-4} alkyl, heterocyclyl, heterocyclyl-C_{1-4}alkyl, and R^8;

or the two adjacent R^9 substituents on an aromatic ring are taken together to form a 5 or 6-membered ring having from 0-2 heteroatoms selected from O, N, and S;

R^8 is selected from halogen, CN, -OH, -NH_2, -NO_2, -C(O)OH, -C(S)OH, -C(O)NH_2, -C(S)NH_2, -S$(O)_2$$NH_2$, -NHC(O)$NH_2$, -NHC(S)$NH_2$, -NHS$(O)_2$$NH_2$, -C(NH)$NH_2$, -OR^a, -SR^a, -OC(O)R^a, -OC(S)R^a, -C(O)R^a, -C(S)R^a, -C(O)OR^a, -C(S)OR^a, -S(O)R^a, -S$(O)_2$R^a, -C(O)NHR^a, -C(S)NHR^a, -C(O)NR^{a}R^a, -C(S)NR^{a}R^a, -S$(O)_2$NHR^a, -S$(O)_2$NR^{a}R^a, -C(NH)NHR^a, -C(NH)NR^{a}R^a, -NHC(O)R^a, -NHC(S)R^a, -NR^{a}C(O)R^a, -NR^{a}C(S)R^a, -NHS$(O)_2$R^a, -NR^{a}S$(O)_2$R^a, -NHC(O)NHR^a, -NHC(S)NHR^a, -NR^{a}C(O)NH_2, -NR^{a}C(S)NH_2, -NR^{a}C(O)NHR^a, -NR^{a}C(S)NHR^a, -NHC(O)NR^{a}R^a, -NHC(S)NR^{a}R^a, -NR^{a}C(O)NR^{a}R^a, -NR^{a}C(S)NR^{a}R^a, -NHS$(O)_2$NHR^a, -NR^{a}S$(O)_2$$NH_2$, -NR^{a}S$(O)_2$NHR^a, -NHS$(O)_2$NR^{a}R^a, -NR^{a}S$(O)_2$NR^{a}R^a, -NHR^a, and -NR^{a}R^a;

R^{10} is H, -CN, C_{1-4}alkyl, halogen, C_{1-4}haloalkyl, C_{1-4}haloalkoxy, or C_{1-4}alkoxy;

R^3 and R^4 are each independently selected from H, halogen, C_{1-4} alkyl, C_{1-4}haloalkyl, C_{1-4}haloalkoxy, cyclopropyl, phenyl, -CN, CN-CH_2-, C_{1-4}alkoxy, R^g, and a lone pair of electrons; or

R^3 and R^4 are taken together with the atoms to which they are attached to form an optionally substituted 5 to 8-membered ring having from 0-2 heteroatoms as ring members selected from O, N, and S;

R^g is -OH, -NH_2, -NO_2, -C(O)OH, -C(S)OH, -$C(O)NH_2$, -$C(S)NH_2$, -$S(O)_2NH_2$, -NHC(O)NH_2, -NHC(S)NH_2, -NHS$(O)_2NH_2$, -$C(NH)NH_2$, -OR^h, -SR^h, -$OC(O)R^h$, -$OC(S)R^h$,-$C(O)R^h$, -$C(S)R^h$, -$C(O)OR^h$, -$C(S)OR^h$, -$S(O)R^h$, -$S(O)_2R^h$, -$C(O)NHR^h$, -$C(S)NHR^h$, -$C(O)NR^hR^h$, -$C(S)NR^hR^h$, -$S(O)_2NHR^h$, -$S(O)_2NR^hR^h$, -$C(NH)NHR^h$, -$C(NH)NR^hR^h$, -$NHC(O)R^h$, -$NHC(S)R^h$, -$NR^hC(O)R^h$, -$NR^hC(S)R^h$, -$NHS(O)_2R^h$, -$NR^hS(O)_2R^h$, -$NHC(O)NHR^h$, -NHC(S)NHR^h, -$NR^hC(O)NH_2$, -$NR^hC(S)NH_2$, -$NR^hC(O)NHR^h$, -$NR^hC(S)NHR^h$, -$NHC(O)NR^hR^h$, -$NHC(S)NR^hR^h$, -$NR^hC(O)NR^hR^h$, -$NR^hC(S)NR^hR^h$, -$NHS(O)_2NHR^h$, -$NR^hS(O)_2NH_2$, -$NR^hS(O)_2NHR^h$, -$NHS(O)_2NR^hR^h$, -$NR^hS(O)_2NR^hR^h$, -NHR^h, or -NR^hR^h,

each R^h is independently H or C_{1-2}alkyl; and

each R^5 is independently H or C_{1-4}alkyl.

2. The compound of claim **1**, wherein R^{10} is H.

3. The compound of any of claims **1** or **2**, wherein R^3 and R^4 are each independently H, halogen, C_{1-4}alkyl, C_{1-4}alkoxy, cyclopropyl, -CN, C_{1-4}haloalkyl, or C_{1-4}haloalkoxy; or R^3 and R^4 are taken together with the atoms to which they are attached to form an optionally substituted fused 5 to 8-membered ring having from 0-2 heteroatoms selected from N and S.

4. *The compound of claim* **1** *or* **2**, *wherein* R^3 *and* R^4 *are each independently selected from* H, Br, Cl, methyl, ethyl, cyclopropyl, -CN, CF_3, CHF_2, CH_2F, -OCH_3, -OCF_3, -$OCHF_2$ or –OCH_2F, $CNCH_2$-, $NH_2C(O)$-, CH_3NHCO-, and $CH_3C(O)NH$-; or R^3 and R^4 are taken together with the atoms to which they are attached form a fused ring selected from benzene, pyridine, pyrimidine, pyrazine, pyridazine, cyclobutane, cyclopentane, cyclohexane, cycloheptane, cyclopentene, cyclohexene, cyclooctane, and cyclooctatriene.

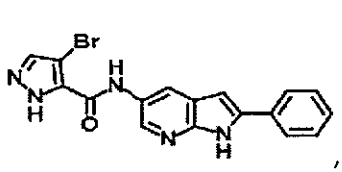
5. The compound of any of claims **1-4**, wherein each R^9 is independently selected from halogen, -CN, C_{1-6}alkyl, C_{1-6}alkoxy, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, C_{3-6}cycloalkyl, C_{3-6} cycloalkyl-C_{1-4}alkyl, aryl, aryl-C_{1-4}alkyl, heteroaryl, heteroaryl-C_{1-2} alkyl, heterocyclyl, and heterocyclyl-C_{1-4}alkyl.

6. The compound of any of claims **1-4**, wherein R^7 is vinyl, ethynyl, deuterated C_{1-6}alkyl, C_{1-6}alkyl, halogen, C_{1-6}alkoxy, 2-cyclopropylethynyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, phenyl, benzyl, 1-pyrazolyl, 3-pyrazolyl, 4-pyrazolyl, 2-oxazolyl, 4-oxazolyl, 5-oxazolyl, 3-isoxazolyl, 4-isoxazolyl, 5-isoxazolyl, 2-thiozolyl, 4-thiozolyl, 5-thiozolyl, 2-pyrimidinyl, 4-pyrimidinyl, 5-pyrimidinyl, 2-pyrazinyl, 3-pyridazinyl, 4-pyridazinyl, cyclopropyl, cyclopropylmethyl, cyclopropylcarbonyl, cyclobutyl, cyclobutylmethyl, cyclopentyl, cyclopentylmethyl, cyclohexyl, cyclohexylmethyl, benzoyl, phenylcarbamoyl, 1-piperidinyl, 2-piperidinyl, 3-piperidinyl, 4-piperidinyl, 1-piperazinyl, 2-piperazinyl, 4-morpholinyl, 4-thiomorpholinyl, 1-cyclopentenyl, 1-cyclohexenyl, 1,2,3,6-tetrahydropyridin-4-yl, 1,2,3,6-tetrahydropyridin-5-yl, 2,5-dihydro-1H-pyrrol-3-yl, or 2,5-dihydro-pyrrol-1-yl, each of which is optionally substituted with from 1-4 R^{11} members independently selected from halogen, -OH, $-NH_2$, $-CH_3$, ethyl, propyl, isopropyl, 2-methylpropyl, $-CD_3$, $-OCH_3$, -CN, $-CH_2F$, $-CF_2H$, $-CF_3$, CF_3O-, CHF_2O-, CH_2FO-, $-N(C_{1-4}alkyl)_2$, $-NH(C_{1-4}alkyl)$, CH_3CONH-, $NH_2C(O)$-, $CH_3NHC(O)$-, $(CH_3)_2NC(O)$-, cyclopropyl, $-SO_2NHR^{13}$, $-NHSO_2R^{13}$, $-SO_2R^{13}$, $-C(O)NHR^{13}$, $-C(O)R^{13}$, and $-OR^{13}$, wherein each R^{13} is independently C_{1-6}alkyl, C_{3-6}cycloalkyl, phenyl, C_{4-5} heterocycloalkyl, or C_{4-5}heterocycloalkyl-C_{1-2}alkyl, wherein each R^{13} is further optionally substituted with from 1-2 substituents selected from C_{1-4}alkyl and C_{1-4}alkoxy.

7. The compound of any of claims **1-4**, wherein R^7 is selected from Cl, Br, phenyl, 4-fluorophenyl, 2-fluorophenyl, 3-fluorophenyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, 1-cyclopropylcarbonyl-1,2,3,6-tetrahydropyridin-4-yl, 1-morpholinocarbonyl, 1,2,3,6-tetrahydropyridin-4-yl, 1,2,3,6-tetrahydropyridin-5-yl, 1,3-dimethyl-pyrazol-4-yl, 1-(4-piperidinyl)pyrazol-4-yl, 3,4-dimethyl-1H-pyrazol-5-yl, 1-(cyclopropylcarbonyl)-2,5-dihydro-pyrrol-3-yl, 3-fluoro-propynyl, 3,5-dimethyl-isoxazol-4-yl, and 5-thiazolyl.

8. The compound of any of claims **1-7**, wherein R^5 is H.

9. The compound of claim **1**, wherein the compound is selected from:



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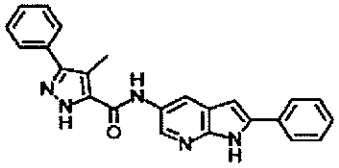

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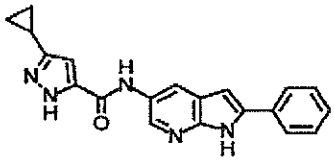
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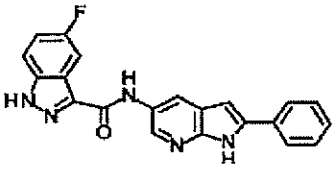
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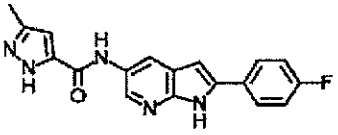
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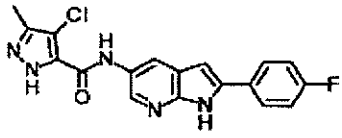
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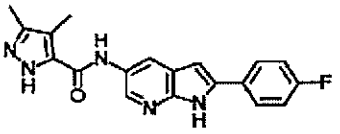
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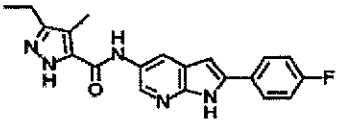
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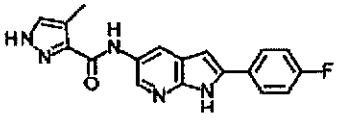
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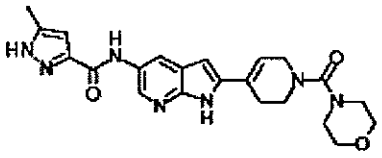
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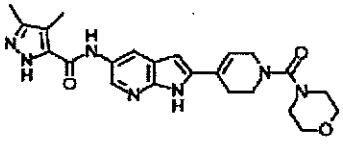
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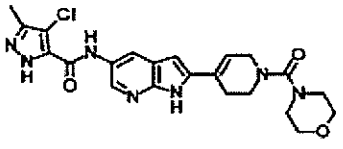
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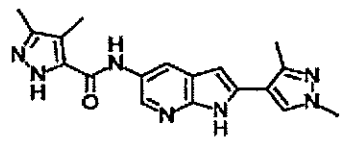
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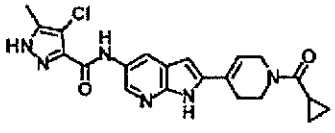
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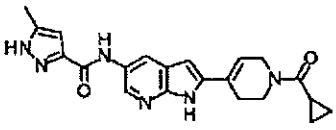
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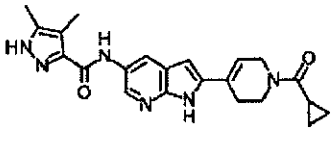
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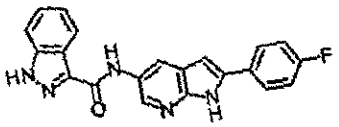

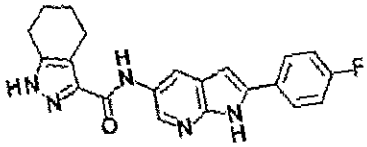

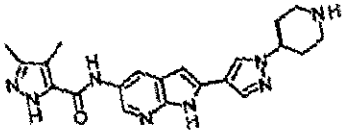

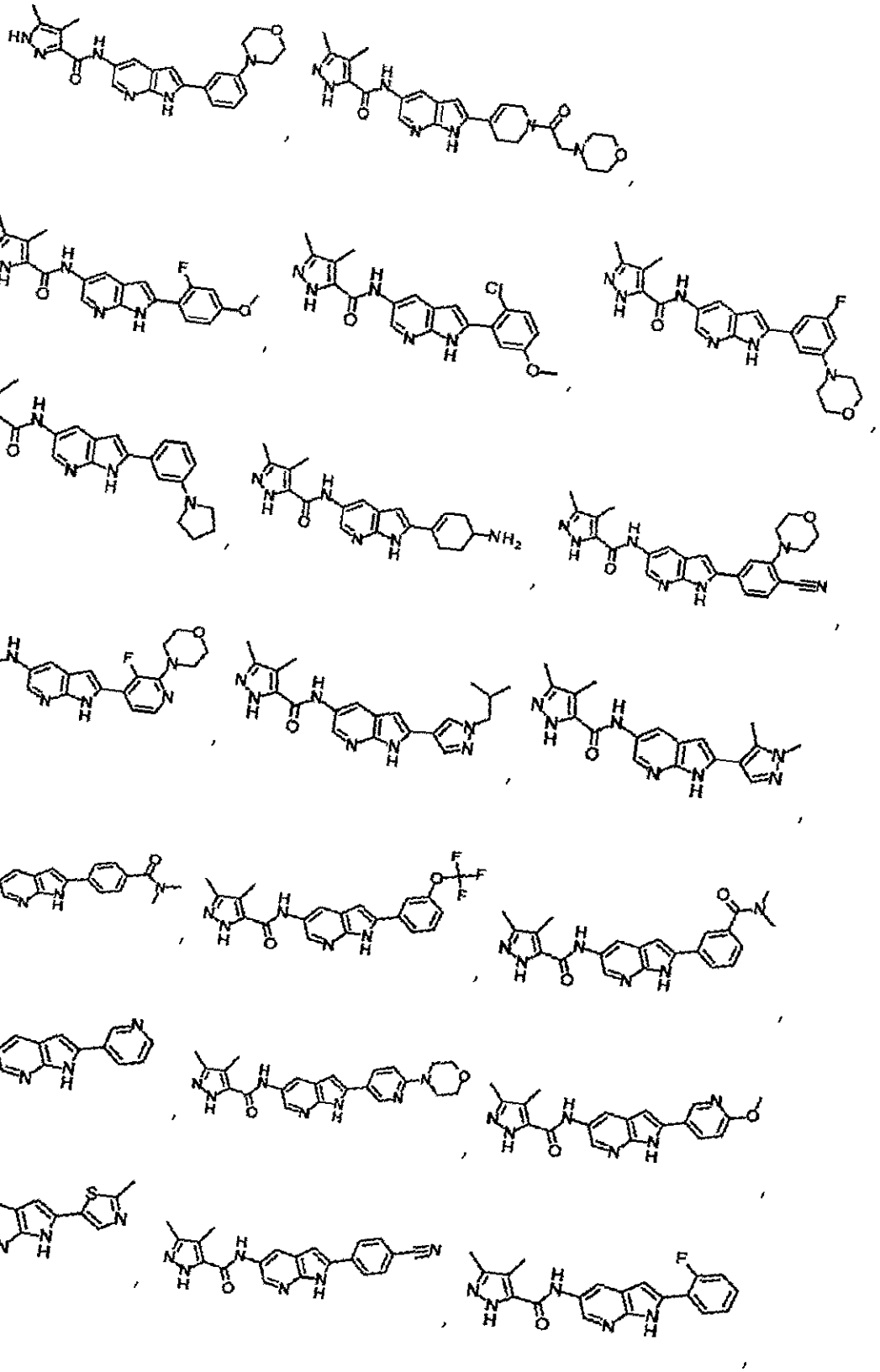

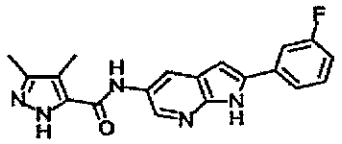
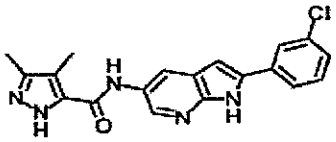
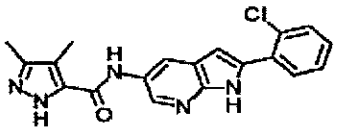
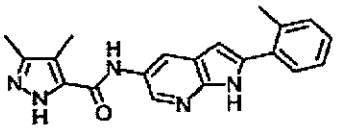
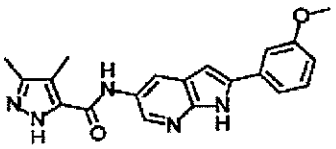
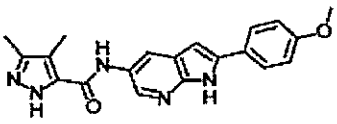
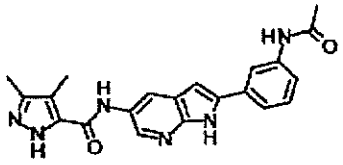
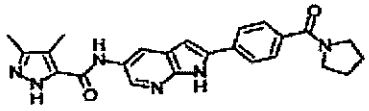
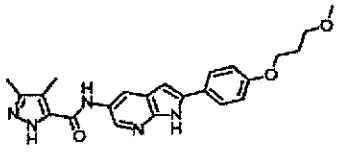
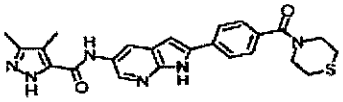
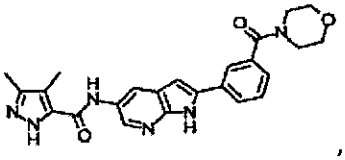
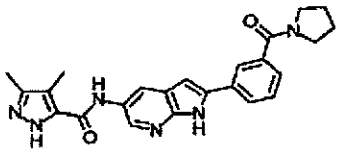
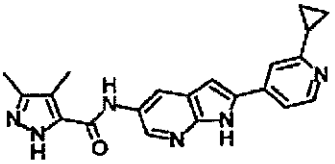
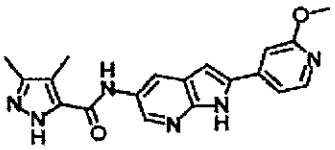
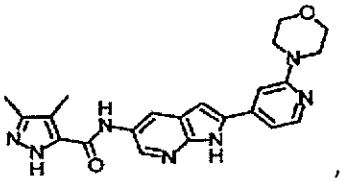
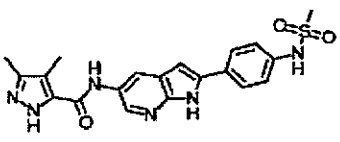
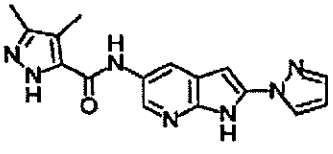
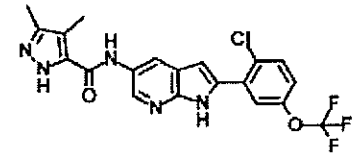
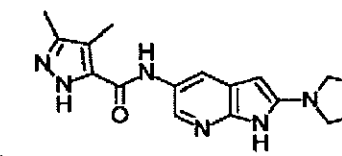
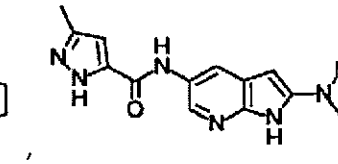

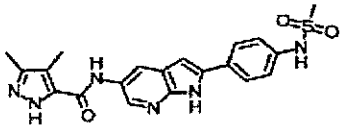
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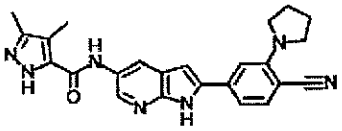
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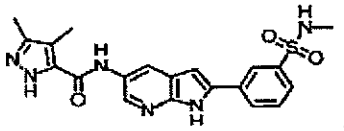
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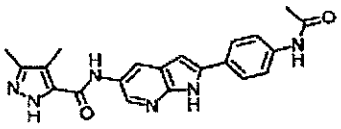
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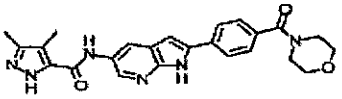
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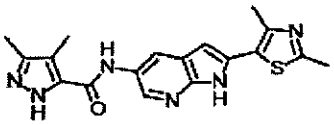
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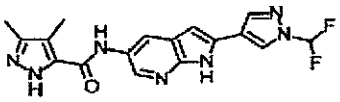
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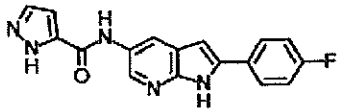
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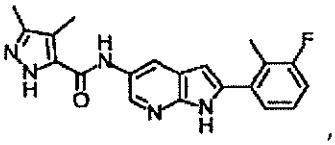
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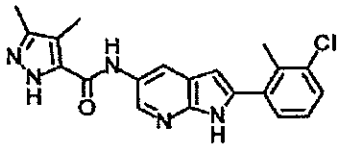
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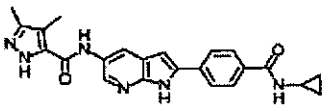
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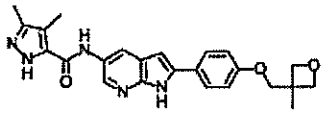
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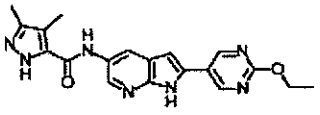
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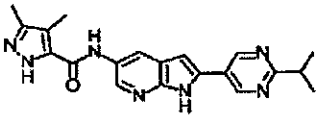
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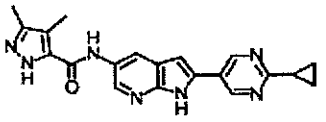
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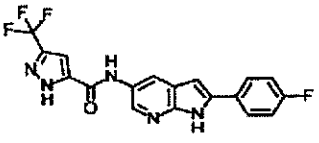
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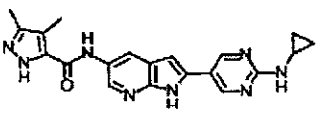
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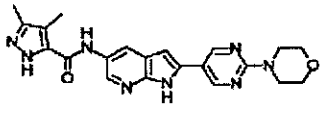
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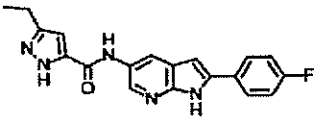
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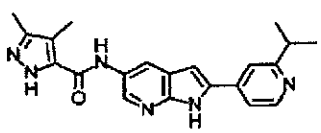
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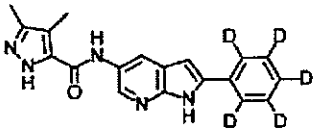
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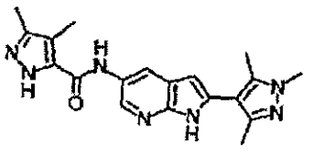
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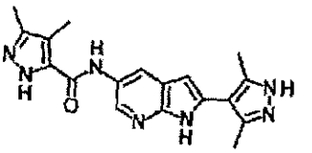
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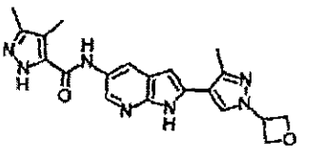
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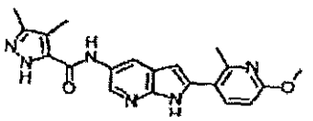
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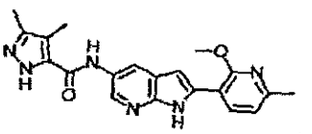
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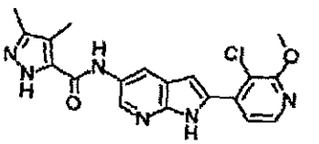
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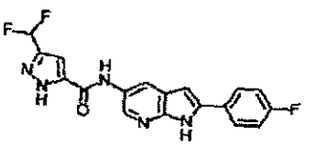
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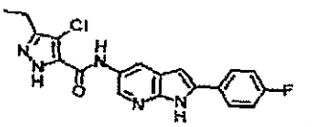
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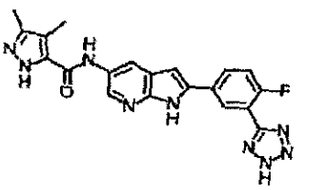
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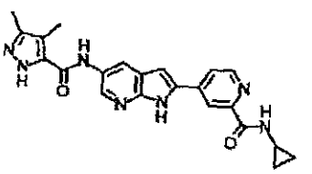
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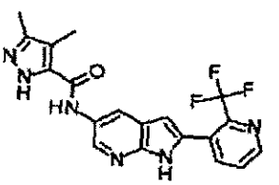
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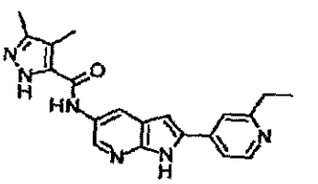
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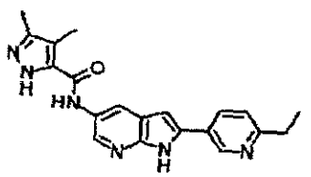
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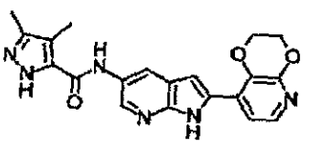
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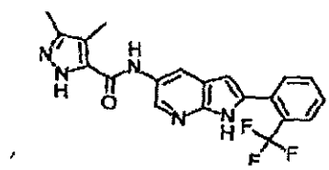
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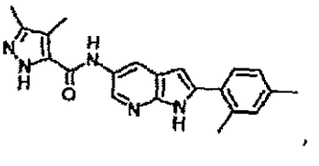
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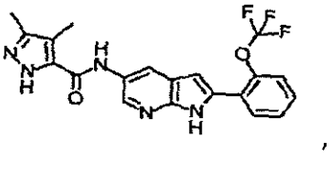
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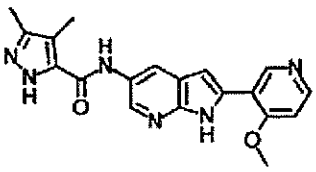
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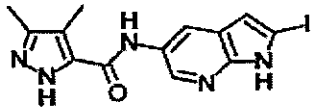
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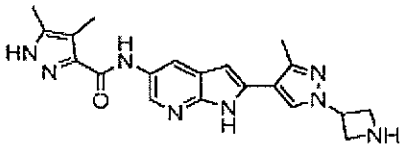
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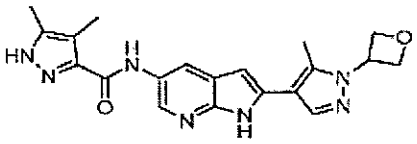
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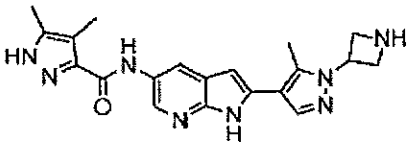
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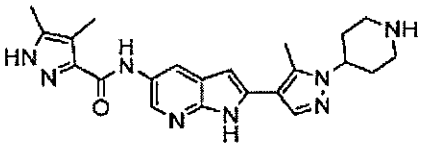
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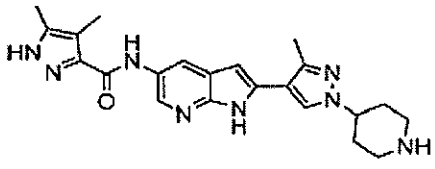
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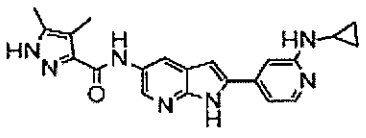
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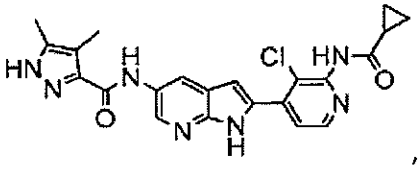
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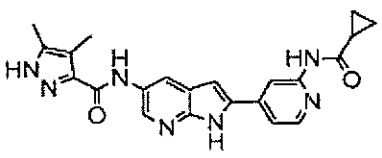
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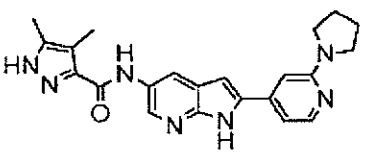
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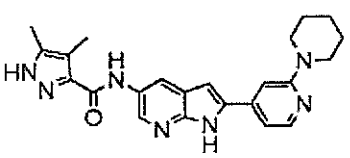
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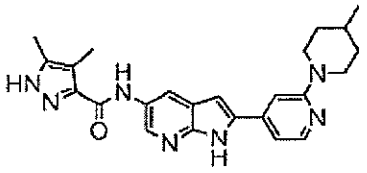
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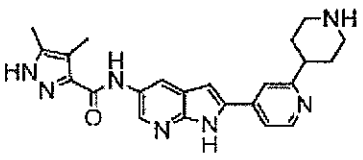
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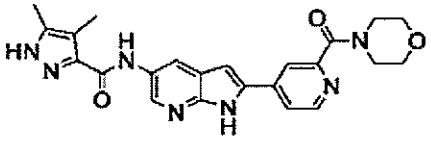
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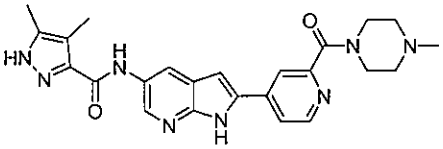
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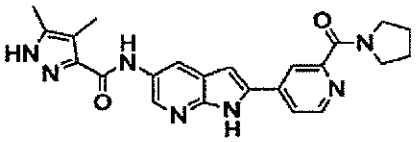
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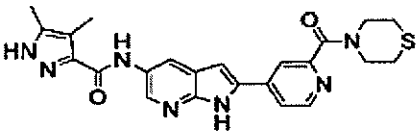
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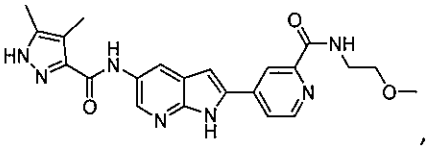
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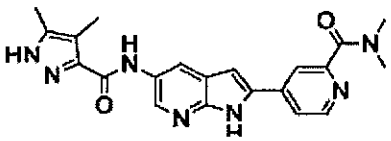
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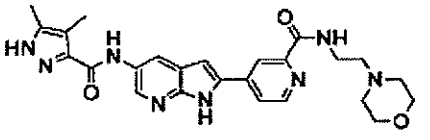
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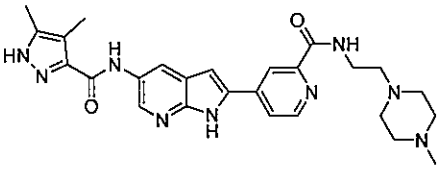
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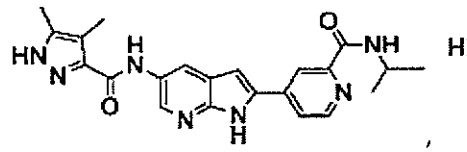
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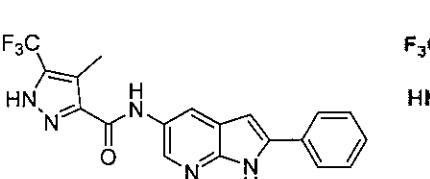
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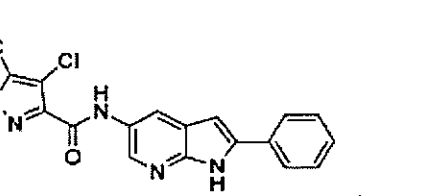
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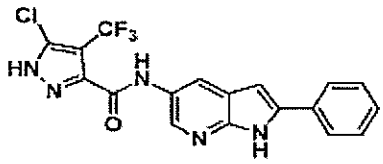
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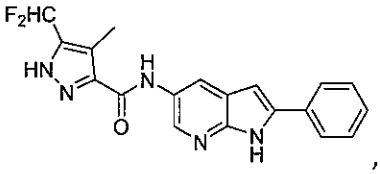
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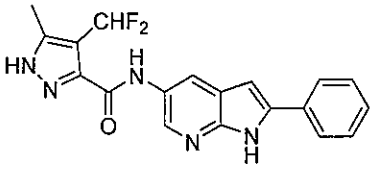
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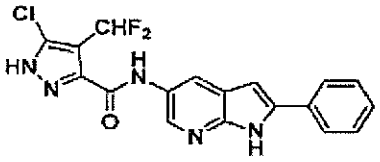
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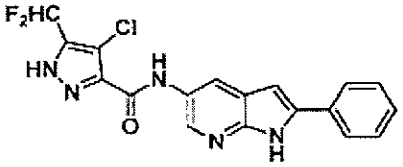
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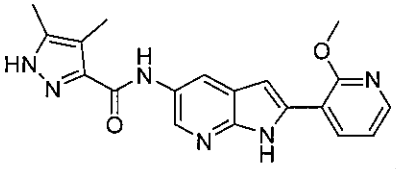
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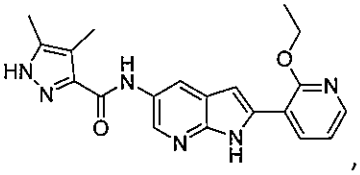
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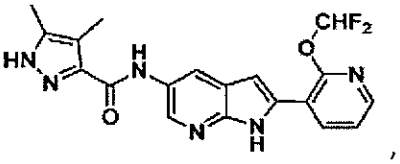
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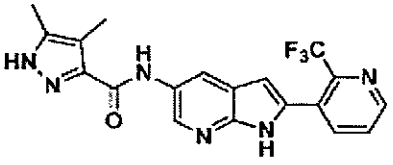
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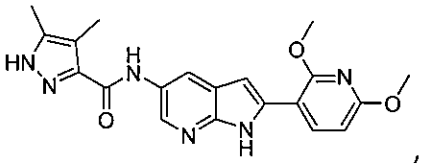
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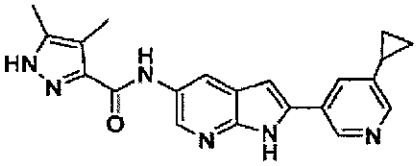
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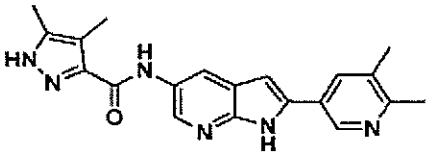
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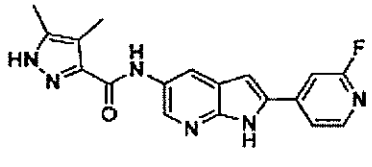
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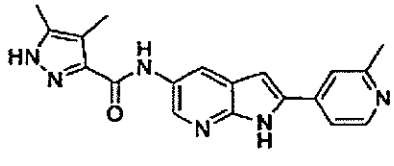
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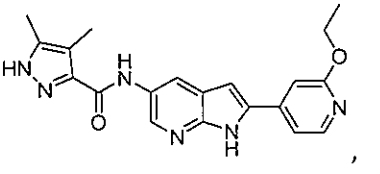
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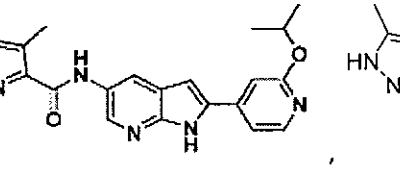
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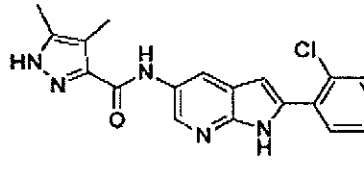
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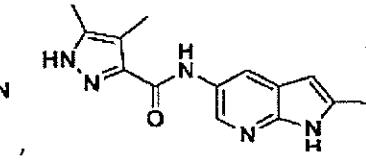
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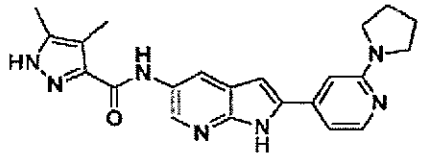
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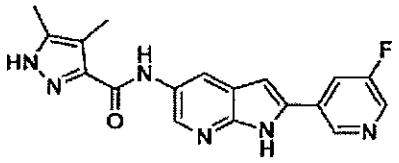
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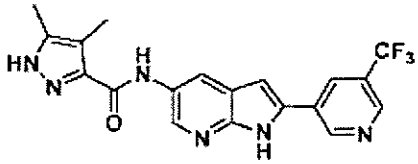
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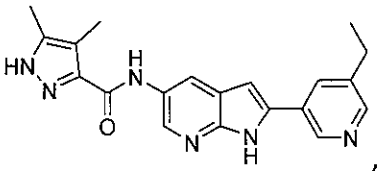
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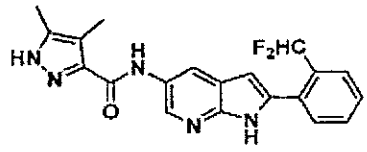
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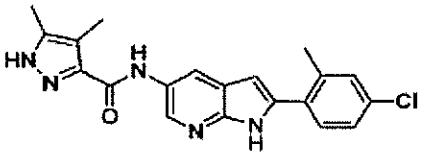
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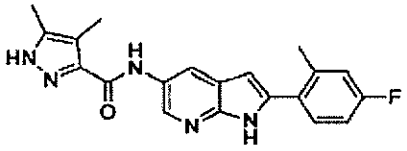
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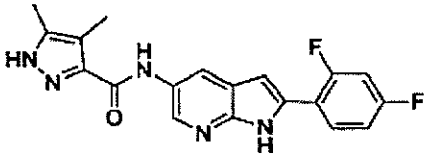
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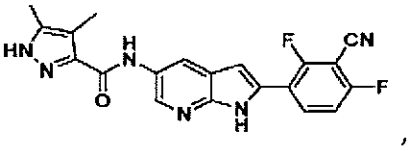
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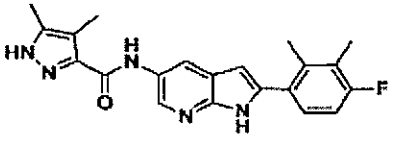
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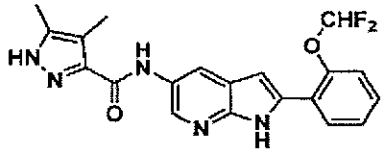
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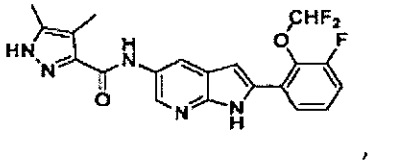
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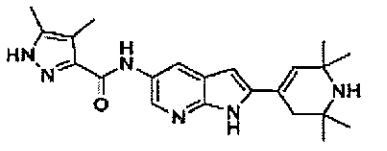
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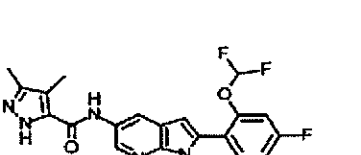
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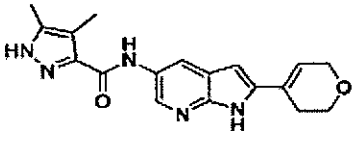
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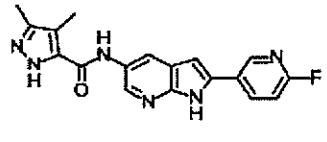
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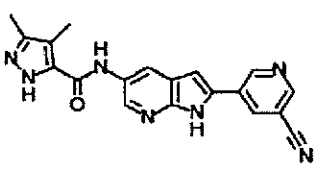
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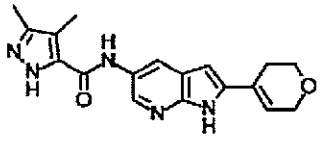
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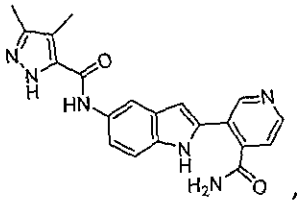
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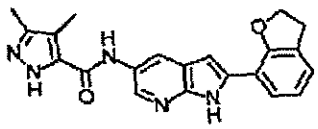
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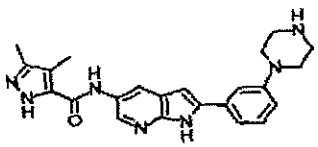
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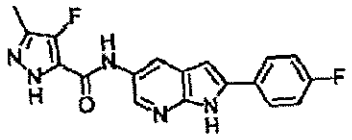
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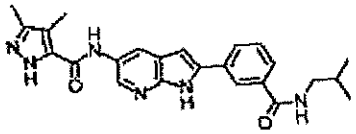
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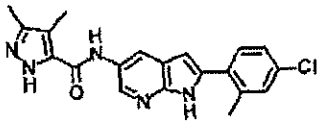
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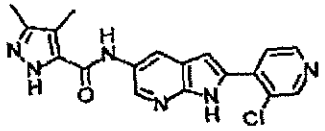
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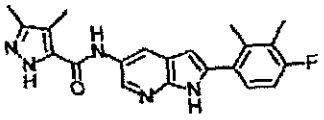
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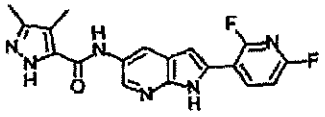
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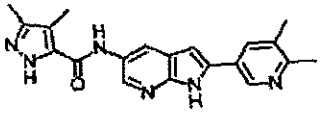
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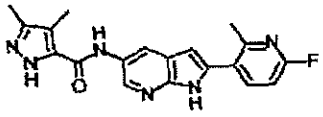
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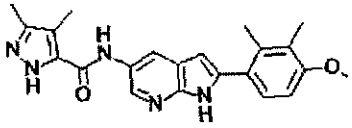
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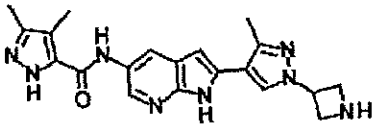
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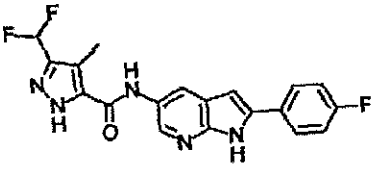
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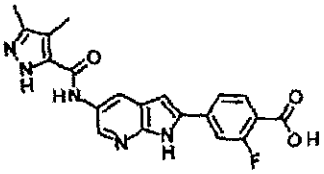
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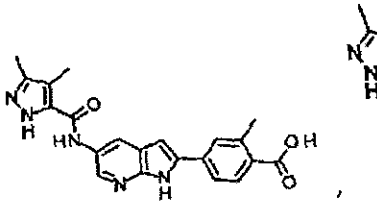
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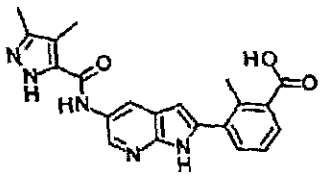
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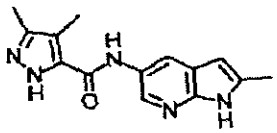
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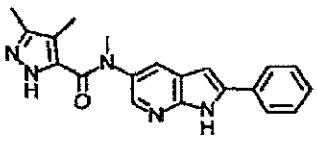
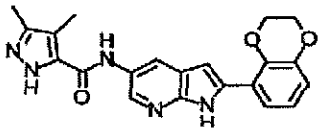
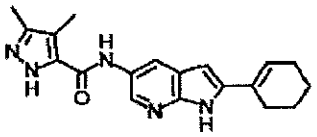
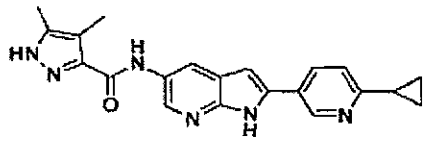
 ,  , and  ,

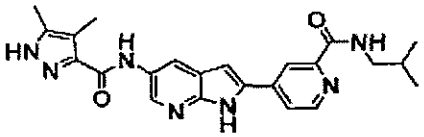
or a pharmaceutically acceptable salt, hydrate, solvate, tautomer, or stereoisomer thereof.

10. The compound of claim **1**, wherein the compound is:



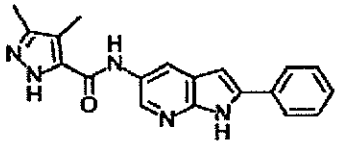
or a pharmaceutically acceptable salt, a hydrate, a solvate, a tautomer, or a stereoisomer thereof.

11. The compound of claim **1**, wherein the compound is:



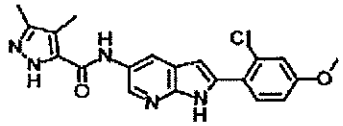
or a pharmaceutically acceptable salt, a hydrate, a solvate, a tautomer, or a stereoisomer thereof.

12. The compound of claim **1**, wherein the compound is:



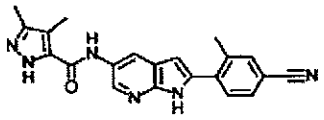
or a pharmaceutically acceptable salt, a hydrate, a solvate, a tautomer, or a stereoisomer thereof.

13. The compound of claim **1**, wherein the compound is:



or a pharmaceutically acceptable salt, a hydrate, a solvate, a tautomer, or a stereoisomer thereof.

14. The compound of claim **1**, wherein the compound is:



or a pharmaceutically acceptable salt, a hydrate, a solvate, a tautomer, or a stereoisomer thereof.

15. A compound as defined in any of claims **1-14**, for use in the treatment of melanoma, glioma, glioblastoma multiforme, pilocytic astrocytoma, sarcoma, liver cancer, biliary tract cancer, cholangiocarcinoma, colorectal cancer, lung cancer, gallbladder cancer, breast cancer, pancreatic cancer, thyroid cancer, renal cancer, ovarian cancer, adrenocortical cancer, prostate cancer, histiocytic lymphoma, neurofibromatosis, gastrointestinal stromal tumors, acute myeloid leukemia, myelodysplastic syndrome, leukemia, tumor angiogenesis, medullary thyroid cancer, carcinoid, small cell lung cancer, Kaposi's sarcoma, pheochromocytoma, acute pain, chronic pain, or polycystic kidney disease.

16. A pharmaceutical composition comprising a compound of any one of claims **1-14**, and a pharmaceutically acceptable carrier or excipient.

17. A pharmaceutical composition comprising a compound of any of claims **1-14**, or a composition of claim **16**, and another therapeutic agent.

18. A compound of any one of claims **1-14**, or a composition of claim **16** or **17**, for use in the treatment of cancer, acute myelocytic leukemia (AML), gastrointestinal stromal tumours, or mastocytosis.

19. A compound of any one of claims **1-14**, or a composition of claim **16** or **17**, for use in the treatment of gastrointestinal stromal tumours.