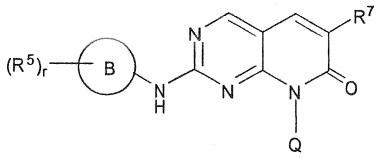
CLAIMS

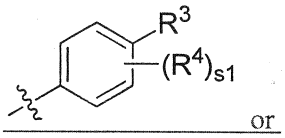
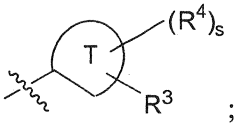
WHAT IS CLAIMED IS:

1. A compound having the structure of Formula I or pharmaceutically acceptable salt or N-oxide thereof:



Formula I;

wherein:

R^7 is  or  ;

wherein ring T is an aryl, or a heteroaryl ring;

R^3 is a substituted or unsubstituted cycloalkyl, a substituted or unsubstituted C-linked heteroaryl ~~attached to ring T via a carbon atom of R^3, or a substituted or unsubstituted heterocycloalkyl attached to ring T via a carbon atom of R^3~~;

Q is a substituted or unsubstituted alkyl, a substituted or unsubstituted heteroalkyl, a substituted or unsubstituted heterocycloalkyl, a substituted or unsubstituted cycloalkyl, a substituted or unsubstituted cycloalkylalkyl, a substituted or unsubstituted heterocycloalkylalkyl, a substituted or unsubstituted aryl, a substituted or unsubstituted arylalkyl, a substituted or unsubstituted heteroaryl, or a substituted or unsubstituted heteroarylalkyl;

each R^4 is independently halogen, -CN, $-NO_2$, -OH, $-OCF_3$, $-OCH_2F$, $-OCF_2H$, $-CF_3$, $-SR^8$, $-NR^{10}S(=O)_2R^9$, $-S(=O)_2N(R^{10})_2$, $-C(=O)R^8$, $-OC(=O)R^9$, $-CO_2R^{10}$, $-N(R^{10})_2$, $-C(=O)N(R^{10})_2$, $-NR^{10}C(=O)R^{10}$, $-N\,R^{10}C(=O)OR^{10}$, $-NR^{10}C(=O)N(R^{10})_2$, a substituted or unsubstituted alkyl, a substituted or unsubstituted alkoxy, a substituted or unsubstituted heteroalkyl, a substituted or unsubstituted cycloalkyl, or a substituted or unsubstituted heterocycloalkyl;

R^8 is H or R^9;

R^9 is a substituted or unsubstituted alkyl, a substituted or unsubstituted cycloalkyl, a substituted or unsubstituted heterocycloalkyl, a substituted or unsubstituted aryl, or a substituted or unsubstituted heteroaryl;

each R^{10} is independently H, a substituted or unsubstituted alkyl, a substituted or unsubstituted cycloalkyl, a substituted or unsubstituted heterocycloalkyl, a substituted or unsubstituted aryl, or a substituted or unsubstituted heteroaryl; or two R^{10}, together with the atoms to which they are attached form a heterocycle;

ring B is aryl or heteroaryl;

each R^5 is independently halogen, -CN, $-NO_2$, -OH, $-SR^8$, $-S(=O)R^9$, $-S(=O)_2R^9$, $NR^{10}S(=O)_2R^9$, $-S(=O)_2N(R^{10})_2$, $-C(=O)R^8$, $-OC(=O)R^9$, $-CO_2R^{10}$, $-N(R^{10})_2$, $-C(=O)N(R^{10})_2$, $-NR^{10}C(=O)R^{10}$, $-NR^{10}C(=O)OR^{10}$, $-NR^{10}C(=O)N(R^{10})_2$, $-OR^{10}$, a substituted or unsubstituted alkyl, a substituted or unsubstituted alkoxy, a substituted or unsubstituted heteroalkyl, a substituted or unsubstituted cycloalkyl, or a substituted or unsubstituted heterocycloalkyl;

r is ~~0~~ 1 to 8; ~~and~~

s is 0 to 4~~.~~; amd

s1 is 0 to 4.

~~2. The compound of claim 1, wherein ring T is an aryl ring.~~

~~3. The compound of claim 1, wherein ring T is a heteroaryl ring.~~

~~4.~~ 2. The compound of claim 1 ~~or 3~~, wherein ring T is selected from pyrrole, furan, thiophene, pyrazole, imidazole, isoxazole, oxazole, isothiazole, thiazole, 1,2,3-triazole, 1,3,4-triazole, 1-oxa-2,3-diazole, 1-oxa-2,4-diazole, 1-oxa-2,5-diazole, 1-oxa-3,4-diazole, 1-thia-2,3-diazole, 1-thia-2,4-diazole, 1-thia-2,5-diazole, 1-thia-3,4-diazole, tetrazole, pyridine, pyridazine, pyrimidine, and pyrazine.

~~5. The compound of claim 2, wherein R^3 is a *C*-linked heterocycloalkyl.~~

~~6. The compound of claim 3 or 4, wherein R^3 is a *C*-linked heterocycloalkyl.~~

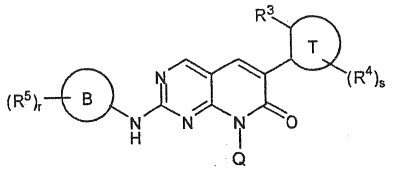
~~7.~~ 3. The compound of claim 2, wherein R^3 is a substituted or unsubstituted *C*-linked heteroaryl.

~~8. The compound of claim 3 or 4, wherein R^3 is a substituted or unsubstituted *C*-linked heteroaryl.~~

~~9.~~ 4. The compound of claim 1, wherein R^3 is a substituted or unsubstituted cycloalkyl.

~~10.~~ 5. The compound of claim ~~9~~ 4 wherein the cycloalkyl is cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl or cycloheptyl.

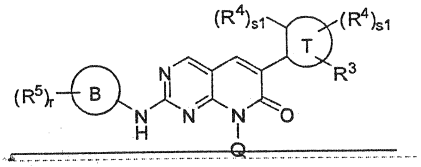
~~11.~~ 6. The compound of any of claims 1-~~10~~ 5 having the structure of Formula II:



Formula II-;

or a pharmaceutically acceptable salt or N-oxide thereof.

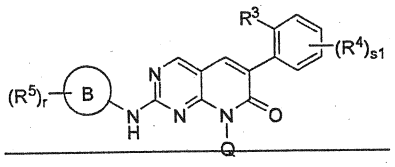
~~12. The compound of any of claims 1-10 having the structure of Formula III:~~



~~Formula III;~~

~~wherein s1 is 0 to 3.~~

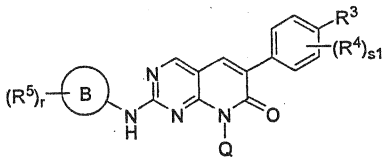
~~13. The compound of any of claims 1-10 having the structure of Formula IV:~~



~~Formula IV;~~

~~wherein s1 is 0 to 4.~~

~~14.~~ 7. The compound of any of claims ~~1-10~~1, 3, 4 or 5 having the structure of Formula V:

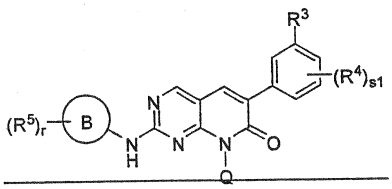


Formula V;

wherein s1 is 0 to ~~4.~~

or a pharmaceutically acceptable salt or N-oxide thereof.

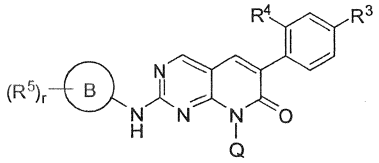
~~15. The compound of any of claims 1-10 having the structure of Formula Va:~~



~~Formula Va;~~

~~wherein s1 is 0 to 4.~~

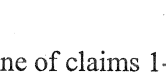
~~16.~~ 8. The compound of any of claims ~~1-10~~1, 3, 4, 5 or 7 having the structure of Formula Vb:

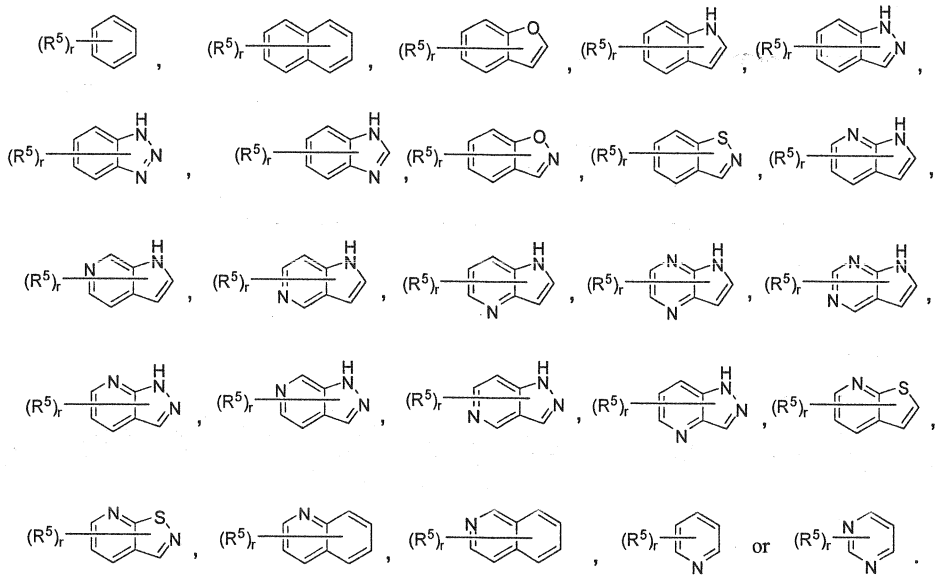


Formula Vb.;

or a pharmaceutically acceptable salt or N-oxide thereof.

~~17.~~ 9. The compound of any one of claims 1-~~8 4 or 7-16~~ wherein R^3 is selected from pyrrole, furan, thiophene, pyrazole, imidazole, isoxazole, oxazole, isothiazole, thiazole, 1,2,3-triazole, 1,3,4-triazole, 1-oxa-2,3-diazole, 1-oxa-2,4-diazole, 1-oxa-2,5-diazole, 1-oxa-3,4-diazole, 1-thia-2,3-diazole, 1-thia-2,4-diazole, 1-thia-2,5-diazole, 1-thia-3,4-diazole, tetrazole, pyridine, pyridazine, pyrimidine, and pyrazine.

~~18.~~ 10. The compound of any one of claims 1-~~9 17~~, wherein  is



~~19.~~ 11. The compound of any one of claims 1-~~10 18~~, where R^5 is halogen, -CN, -OH, a substituted or unsubstituted alkyl, $-OR^{10}$, $-NR^{10}S(=O)_2R^9$, $-S(=O)_2N(R^{10})_2$, $-N(R^{10})_2$, $-C(=O)N(R^{10})_2$, $-NR^{10}C(=O)R^{10}$, $-NR^{10}C(=O)OR^{10}$, $-NR^{10}C(=O)N(R^{10})_2$, or a substituted or unsubstituted heterocycloalkyl.

~~20.~~ 12. The compound of any one of claims 1-11~~18~~, wherein at least one R^5 is -$NR^{10}S(=O)_2R^9$, -$S(=O)_2N(R^{10})_2$, -$N(R^{10})_2$, -$C(=O)N(R^{10})_2$, -$NR^{10}C(=O)R^{10}$, -$NR^{10}C(=O)OR^{10}$, -$NR^{10}C(=O)N(R^{10})_2$, or a substituted or unsubstituted heterocycloalkyl.

~~21.~~ 13. The compound of any one of claims 1-12~~18~~, wherein at least one R^5 is -$N(R^{10})_2$, or a substituted or unsubstituted heterocycloalkyl.

~~22.~~ 14. The compound of any one of claims ~~1-18~~ 13 wherein at least one of R^5 is a substituted or unsubstituted piperazine, a substituted or unsubstituted piperidine, a substituted or unsubstituted pyrrolidine, or a substituted or unsubstituted morpholine.

~~23.~~ 15. The compound of any one of claims 1-11~~18~~, wherein at least one R^5 is -OR^{10}.

~~24.~~ 16. The compound of any one of claims 1-15~~23~~, wherein each R^4 is independently halogen, -CN, -OH, -OCF_3, -OCF_3, -OCF_2H, -CF_3, -SR^8, a substituted or unsubstituted alkyl, or a substituted or unsubstituted alkoxy.

~~25.~~ 17. The compound of any one of claims 1-16~~11 or 17-23~~, wherein s or s1 is zero.

~~26.~~ 18. The compound of any one of claims 1-17~~25~~, wherein Q is a substituted or unsubstituted alkyl, or a substituted or unsubstituted heteroalkyl.

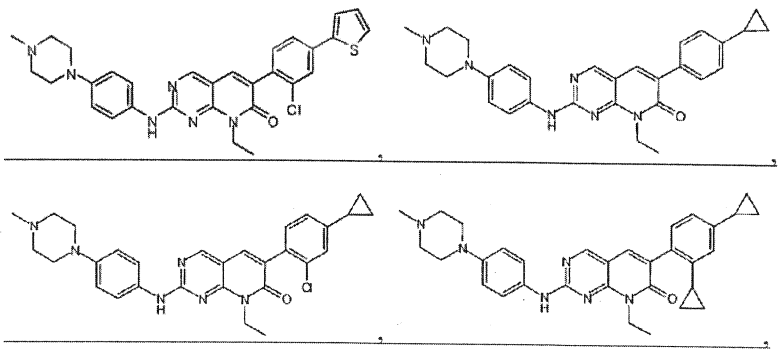
~~27.~~ 19. The compound of any one of claims 1-17 ~~25~~, wherein Q is a substituted or unsubstituted cycloalkyl, or a substituted or unsubstituted heterocycloalkyl.

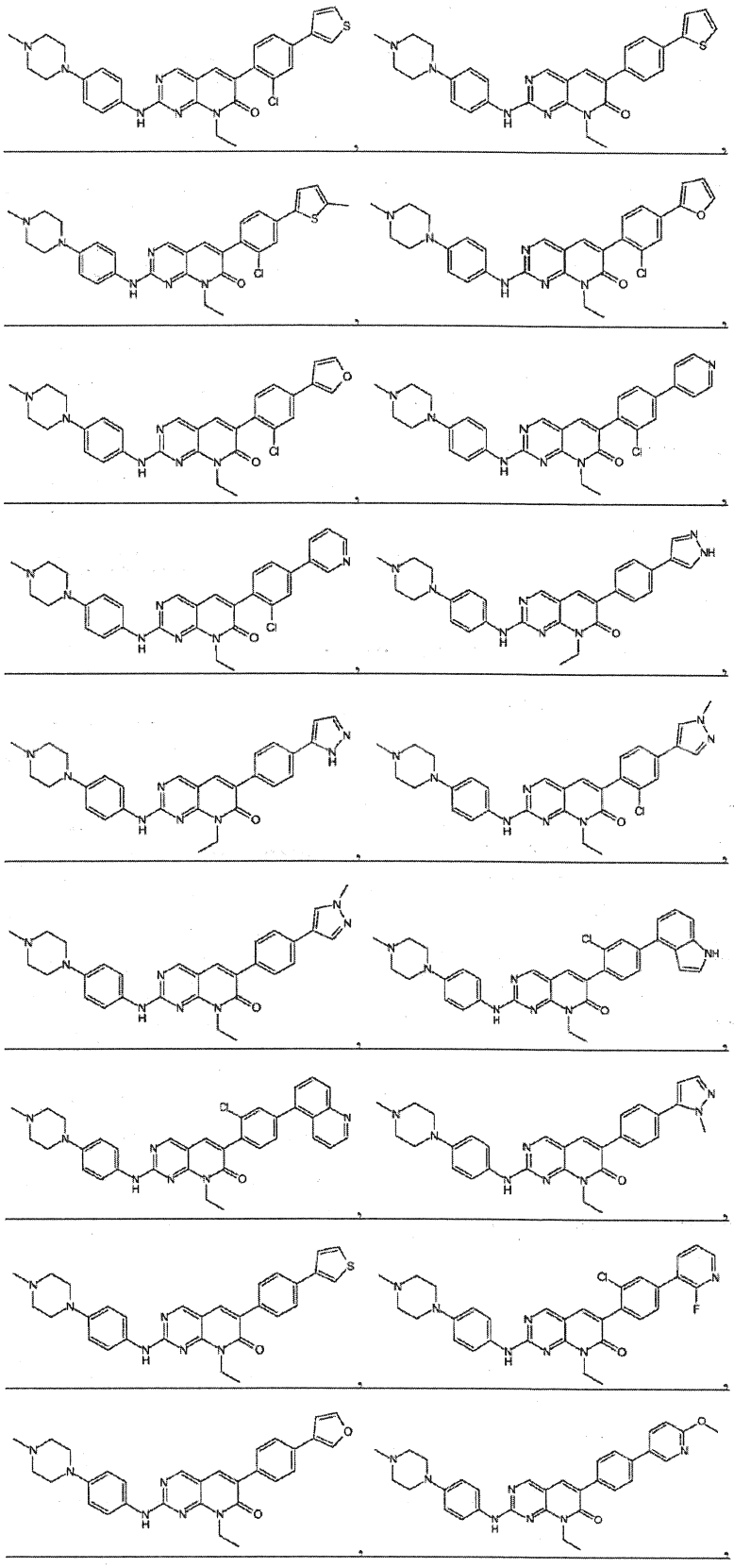
~~28.~~ 20. The compound of any one of claims 1-17~~25~~, wherein Q is a substituted or unsubstituted cycloalkylalkyl, or a substituted or unsubstituted heterocycloalkylalkyl.

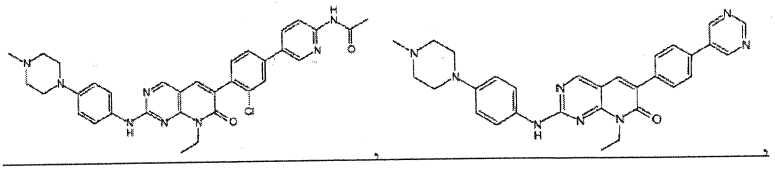
~~29.~~ 21. The compound of any one of claims 1-17~~25~~, wherein Q is a substituted or unsubstituted aryl, or a substituted or unsubstituted heteroaryl.

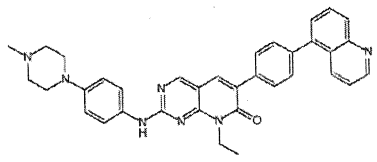
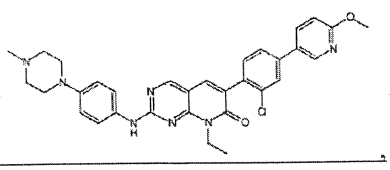
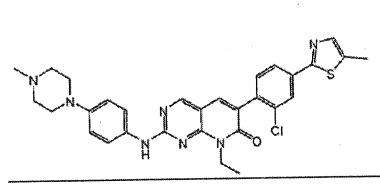
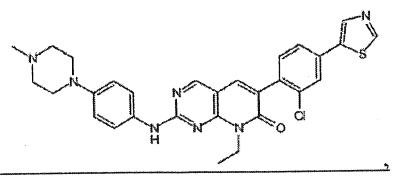
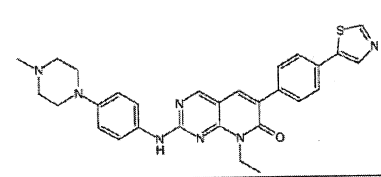
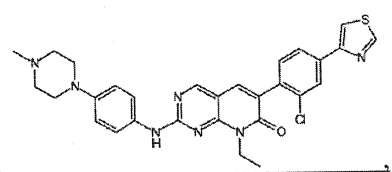
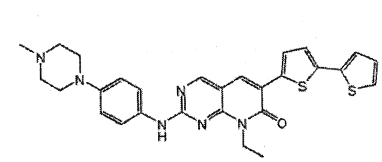
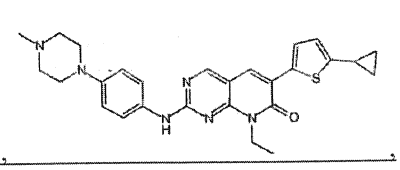
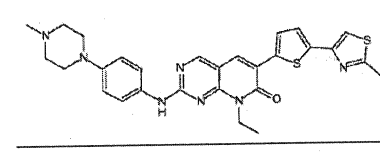
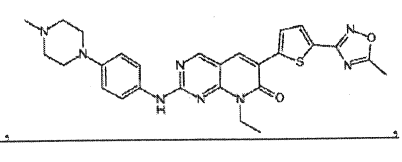
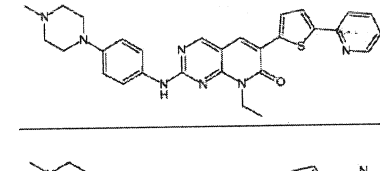
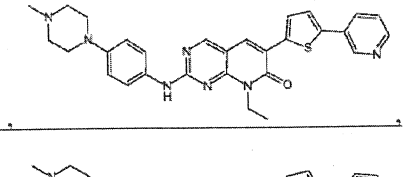
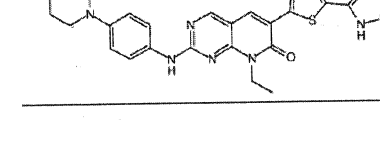
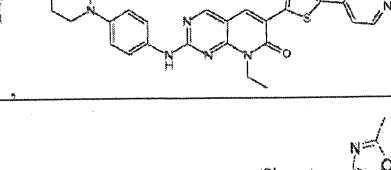
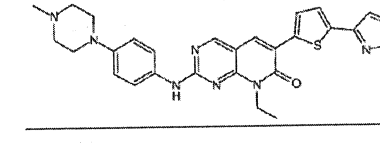
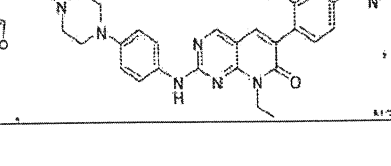
~~30.~~ 22. The compound of any one of claims 1-17~~25~~, wherein Q is a substituted or unsubstituted arylalkyl, or a substituted or unsubstituted heteroarylalkyl.

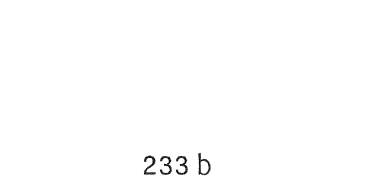
~~31.~~ 23. A compound selected from:

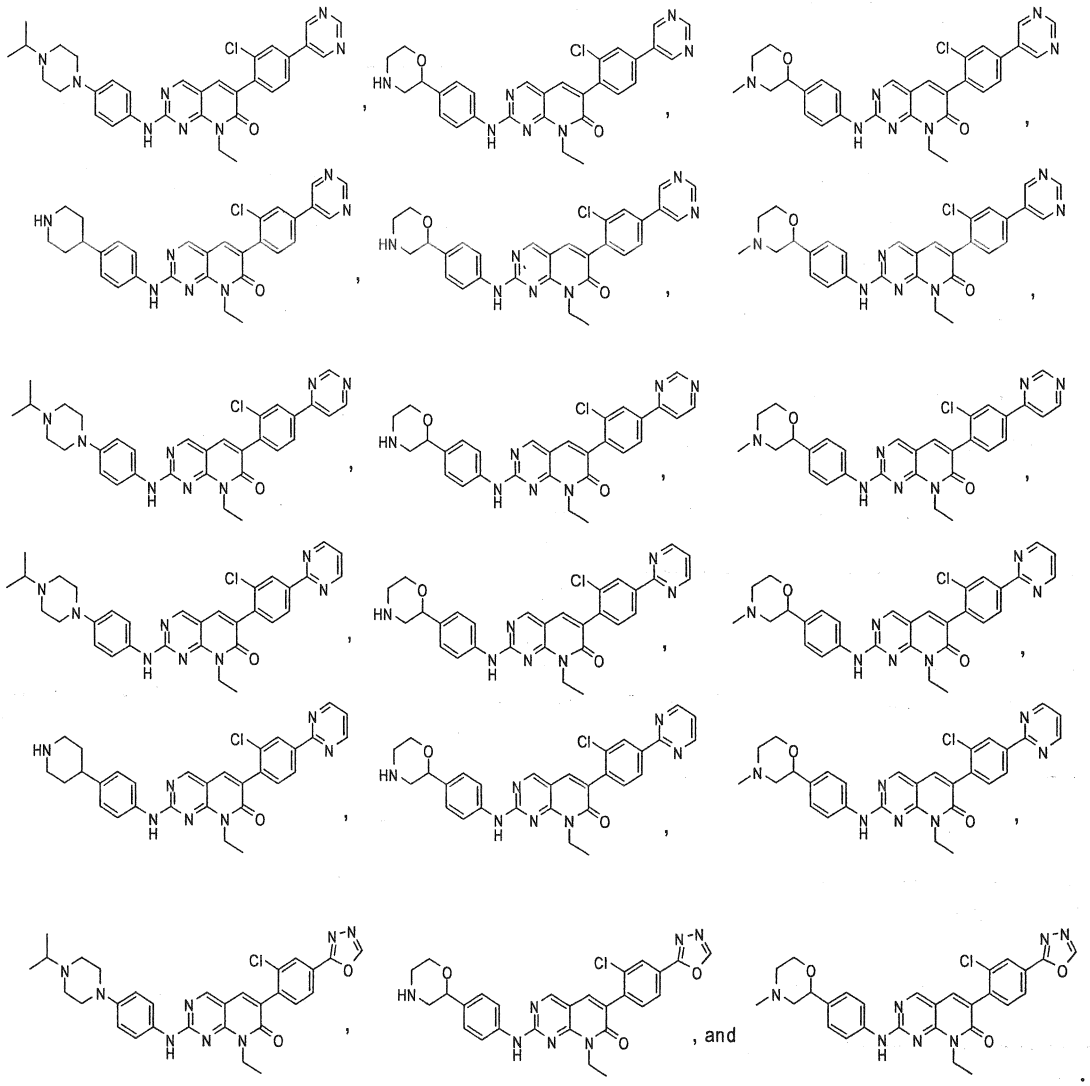










and pharmaceutically acceptable salts thereof.

~~32.~~ 24. A pharmaceutical composition comprising a compound of any of claims 1-23~~31~~ and a pharmaceutically acceptable excipient, carrier, or binder ~~thereof~~.

~~33. A method of inhibiting or partially inhibiting the activity of a p21-activated kinase comprising contacting the kinase with a compound of any one of claims 1-31, or a pharmaceutically acceptable salt, solvate, or N-oxide thereof, or a composition of claim 32.~~

~~34. The method of claim 33 wherein the p21-activated kinase is contacted with a compound of any one of claims 1-31 or the composition of claim 32 in vivo.~~

~~35. The method of claim 33, wherein the p21-activated kinase is contacted with a compound of any one of claims 1-31 or the composition of claim 32 in vitro.~~

~~36. The method of claim 33, wherein the p21-activated kinase is PAK1, PAK2, PAK3, PAK4, PAK5, or PAK6.~~

37. The method of claim 33, wherein the p21-activated kinase is a Group I p21-activated kinase.

38. The method of claim 33, wherein administration of a therapeutically effective amount of a compound of any one of claims 1-31 or the composition of claim 32 causes substantially complete inhibition of one of more Group I p21-activated kinases.

39. The method of claim 33, wherein administration of a therapeutically effective amount of a compound of any one of claims 1-31 or the composition of claim 32 causes partial inhibition of one of more Group I p21-activated kinases.

40. The method of claim 33, wherein administration of a therapeutically effective amount of a compound of any one of claims 1-31 or the composition of claim 32 modulates dendritic spine morphology or synaptic function.

41. The method of claim 33, wherein administration of a therapeutically effective amount of a compound of any one of claims 1-31 or the composition of claim 32 modulates dendritic spine density.

42. The method of claim 33, wherein administration of a therapeutically effective amount of a compound of any one of claims 1-31 or the composition of claim 32 modulates dendritic spine length.

43. The method of claim 33, wherein administration of a therapeutically effective amount of a compound of any one of claims 1-31 or the composition of claim 32 modulates dendritic spine neck diameter.

44. The method of claim 33, wherein administration of a therapeutically effective amount of a compound of any one of claims 1-31 or the composition of claim 32 modulates dendritic spine head diameter.

45. A method of treating a CNS disorder in an individual comprising administering to an individual in need thereof a therapeutically effective amount of a compound of any one of claims 1-31, or a pharmaceutically acceptable salt, solvate, or N-oxide thereof, or the composition of claim 32.

46. The method of claim 45, wherein the CNS disorder is a neuropsychiatric, neurodegenerative or neurodevelopmental disorder.

47. The method of claim 45 or 46, wherein the CNS disorder is schizophrenia, Alzheimer's disease, Mild cognitive impairment, autism, an autism spectrum disorder, neurofibromatosis, bipolar disorder, and depression.

48. The method of claim 45 wherein the autism spectrum disorder is selected from Fragile X, Retts Aspergers, and Angelman syndrome.

49. The method of claim 45, wherein administration of a therapeutically effective amount of a compound of any one of claims 1-31 or the composition of claim 32 normalizes or partially normalizes aberrant synaptic plasticity associated with a CNS disorder.

50. The method of claim 45, wherein administration of a therapeutically effective amount of a compound of any one of claims 1-31 or the composition of claim 32 normalizes or partially normalizes aberrant long term depression (LTD) associated with a CNS disorder.

51. The method of claim 45 wherein administration of a therapeutically effective amount of a compound of any one of claims 1-31 or the composition of claim 32 normalizes or partially normalizes aberrant long term potentiation (LTP) associated with a CNS disorder.

52. Use of a therapeutically effective amount of a compound of any one of claims 1-31 or the composition of claim 32, in the manufacture of a medicament for treating a subject suffering from cancer.

53. The use of claim 52 wherein the cancer is selected from ovarian, breast, colon, brain, neurofibromatosis, chronic myelogenous leukemia, renal cell carcinoma, gastric, leukemia, NSCLC, CNS, melanoma, prostate, T-cell lymphoma, heptocellular, bladder and glioblastoma.

25. The use of a compound of any one of claims 1-23 for the manufacture of a medicament for treatment of a disease selected from the group consisting of psychotic disorder, schizoaffective disorder, schizophreniform, Alzheimer's Disease, age-related cognitive decline, mild cognitive impairment, cognitive decline associated with menopause, Parkinson's Disease, Huntington's Disease, substance abuse and substance dependence, Fragile X, Rett Syndrome, Angelman Syndrome, Asperger Syndrome, autism, autism spectrum disorders, neurofibromatosis, tuberous sclerosis, depression, bipolar disorder, mania, epilepsy, mental retardation, Down Syndrome, Niemann-Pick disease, spongiform encephalitis, Lafora disease, maple syrup urine disease, maternal phenylketonuria, atypical phenylketonuria, generalized anxiety disorder, Turner Syndrome, Lowe Syndrome, obsessive-compulsive disorder, panic disorder, phobias, posttraumatic stress disorder, anorexia nervosa, and bulimia nervosa.

26. The use of claim 25, wherein the disease is schizophrenia, Alzheimer's Disease, mild cognitive impairment, autism, Fragile X, Rett Syndrome, Asperger Syndrome, Angelman Syndrome, neurofibromatosis, bipolar disorder, or depression.

27. The use of claim 25 wherein the compound normalizes or partially normalizes aberrant synaptic plasticity associated with the disease.

28. The use of a compound of any one of claims 1-23 for the manufacture of a medicament for treatment of a disease characterized by altered dendritic spine morphology or synaptic function, dendritic spine density, dendritic spine length, dendritic spine neck diameter, and/or dendritic spine head diameter.

29. The use of a compound of any one of claims1-23 for the manufacture of a medicament for treatment of cancer.

30. The use of claim 29, wherein the cancer is selected from the group consisting of ovarian cancer, breast cancer, colon, brain cancer, neurofibromatosis, chronic myelogenous leukemia, renal cell carcinoma, gastric cancer, leukemia, non-small cell lung cancer (NSCLC), CNS cancer, melanoma, prostate cancer, T-cell lymphoma, hepatocellular cancer, bladder cancer, and glioblastoma.