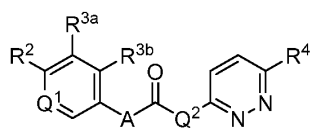


CLAIMS

What is claimed is:

1. A compound having a structure represented by a formula:

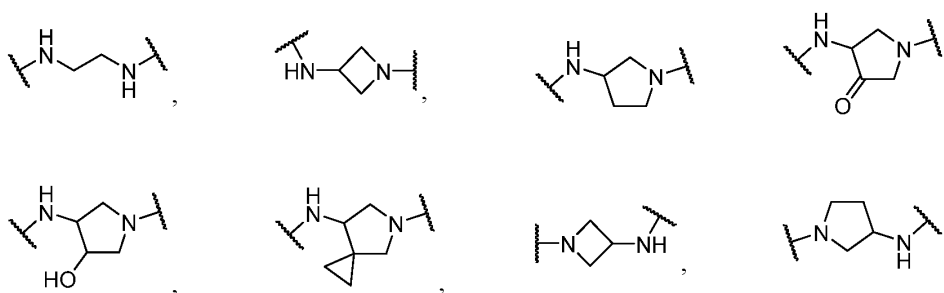


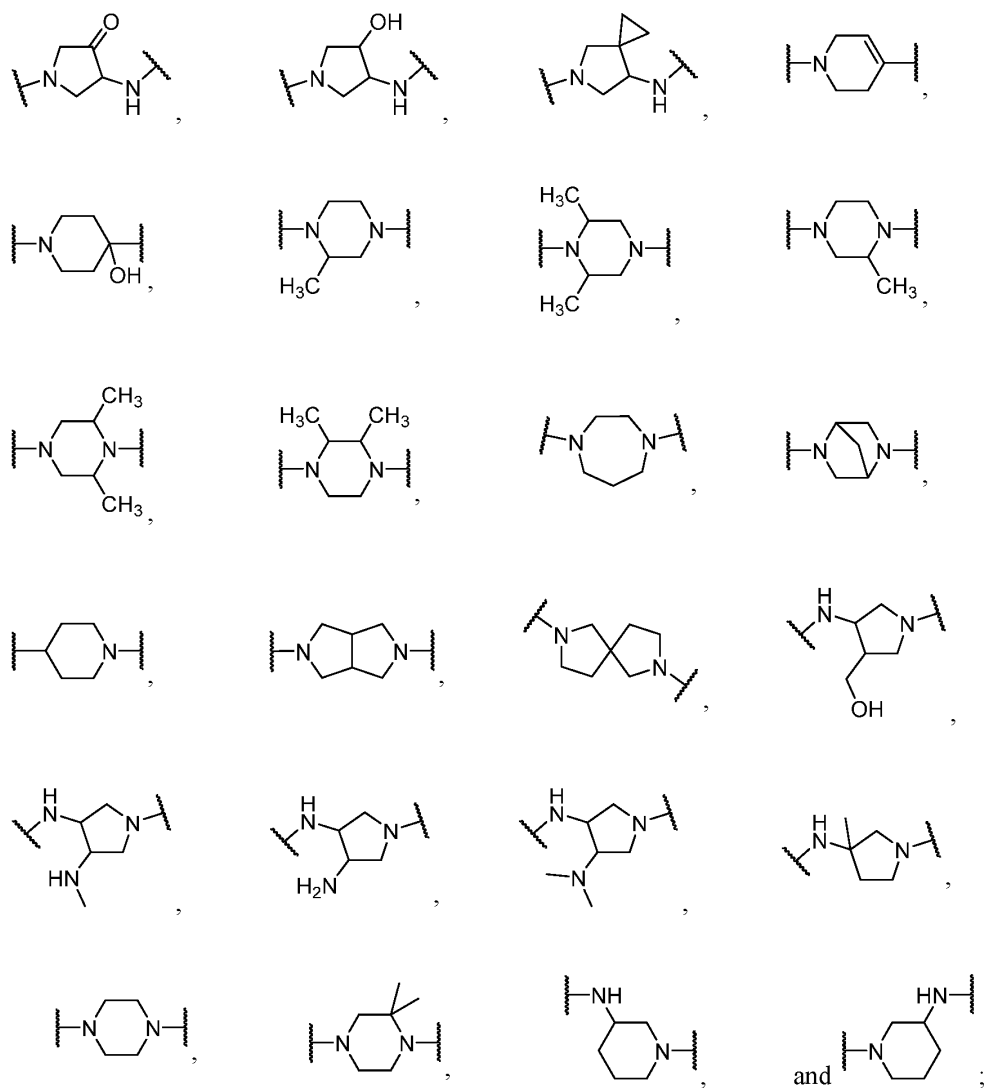
wherein A is selected from O, CO, CH₂, CF₂, NH, N(CH₃), and CH(OH);

wherein Q¹ is CH; and wherein R² is selected from -SCH₃, C1-C8 acyclic alkyl, C1-C8 acyclic alkenyl, C1-C8 monohaloalkyl, C1-C8 polyhaloalkyl, C1-C8 alkoxyhaloalkyl, cyclopropyl, cyclobutyl, and oxetane, wherein the cyclopropyl, cyclobutyl, and oxetane are optionally substituted with 1, 2, or 3 groups independently selected from -OH, C1-C4 alkyl, and C1-C4 alkoxy; or

wherein Q¹ is N; and R² is selected from halogen, -SCH₃, C1-C8 acyclic alkyl, C1-C8 acyclic alkenyl, C1-C8 monohaloalkyl, C1-C8 polyhaloalkyl, C1-C8 alkoxyhaloalkyl, cyclopropyl, cyclobutyl, and oxetane, wherein the cyclopropyl, cyclobutyl, and oxetane are optionally substituted with 1, 2, or 3 groups independently selected from -OH, C1-C4 alkyl, and C1-C4 alkoxy;

wherein Q² is a structure selected from:





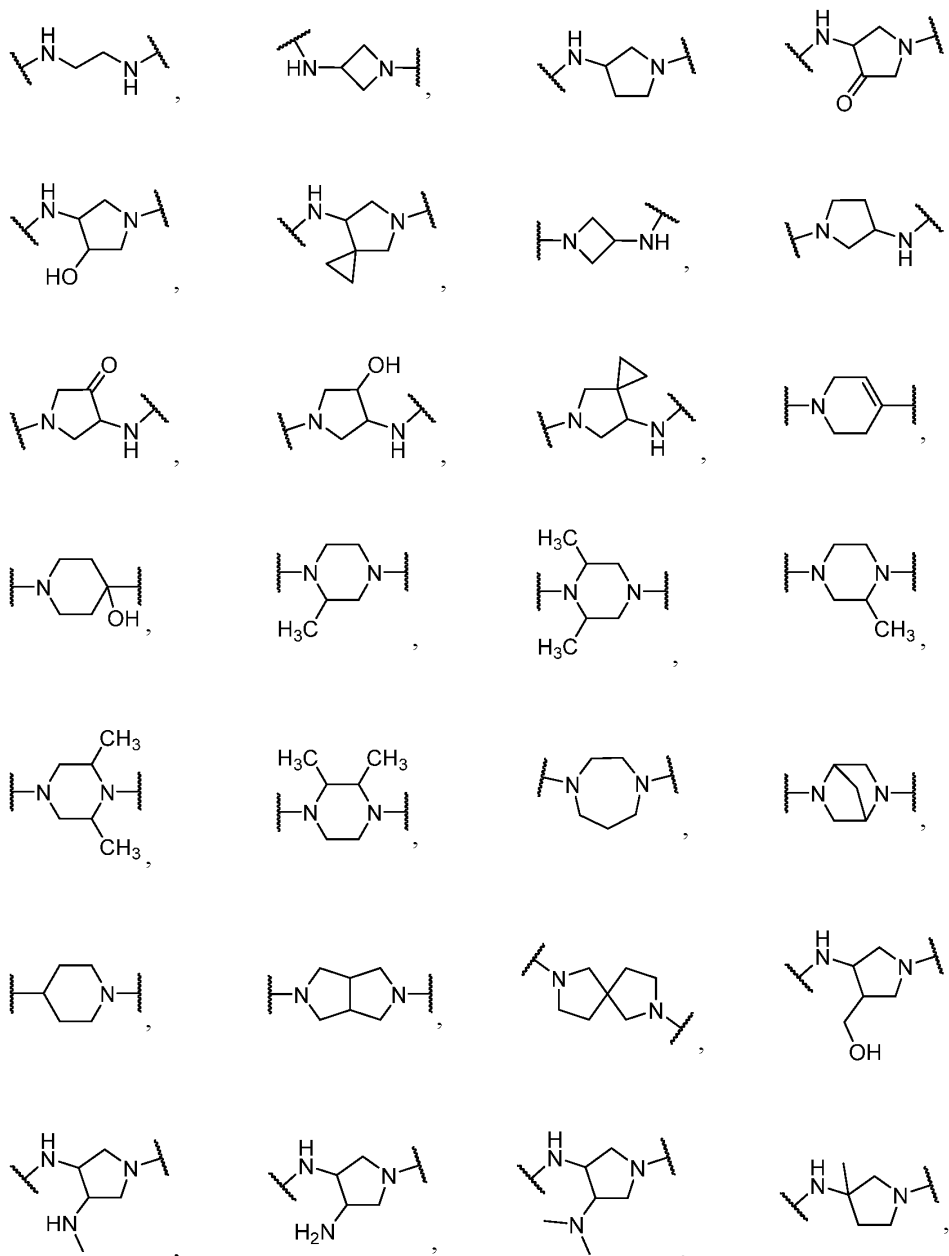
wherein each of R^{3a} and R^{3b} is independently selected from hydrogen, halogen, $-OH$, C1-C4 alkoxy, and C1-C4 alkyl; and

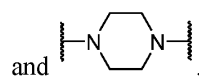
wherein R^4 is selected from hydrogen, halogen, $-CN$, SO_2NH_2 , SO_2CH_3 , SO_2CF_3 , and NO_2 ,

or a pharmaceutically acceptable salt thereof.

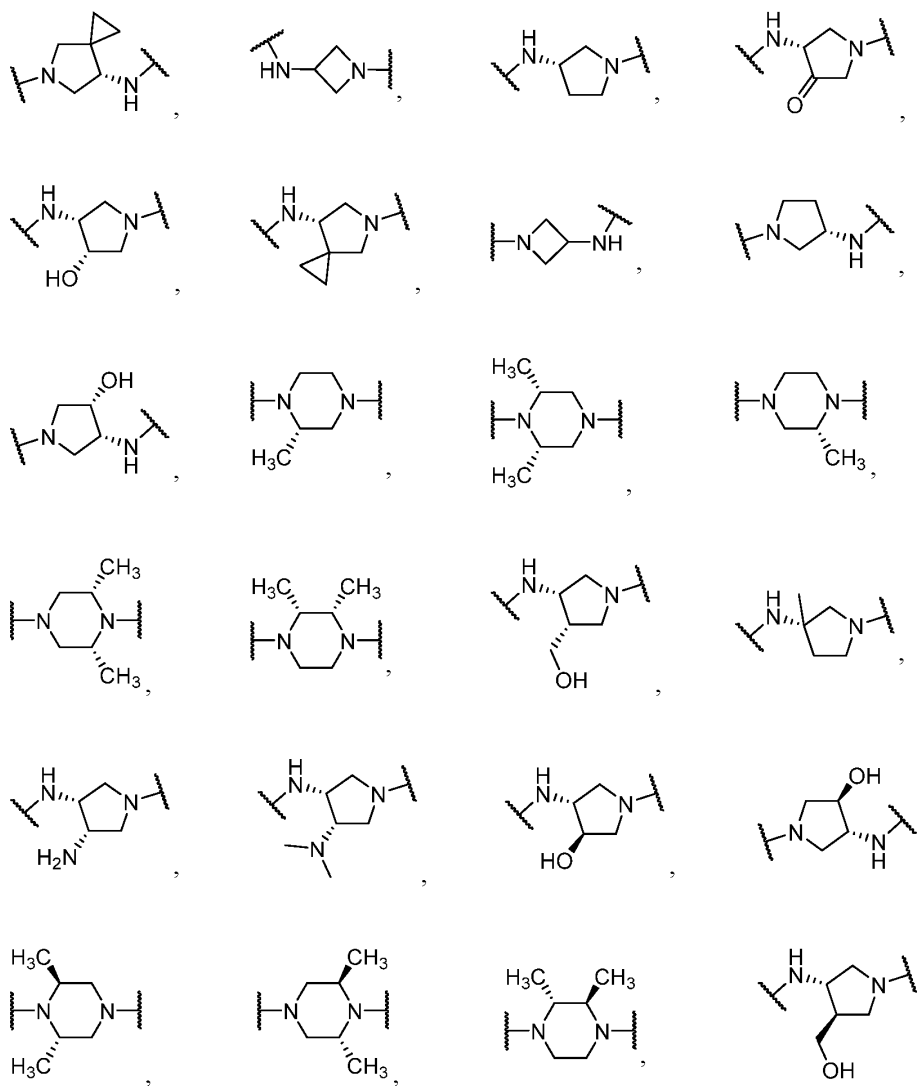
- The compound of claim 1, wherein Q^1 is CH and R^2 is selected from C1-C8 acyclic alkyl, C1-C8 acyclic alkenyl, C1-C8 monohaloalkyl, C1-C8 polyhaloalkyl, and

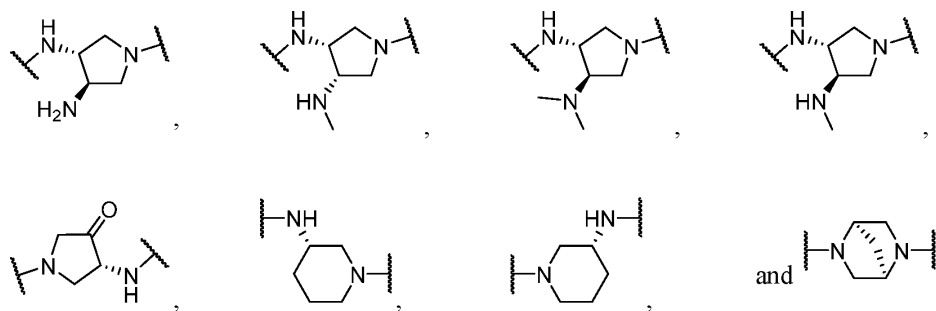
cyclopropyl; or wherein Q^1 is N and R^2 is selected from halogen, C1-C8 acyclic alkyl, C1-C8 acyclic alkenyl, C1-C8 monohaloalkyl, C1-C8 polyhaloalkyl, and cyclopropyl; and wherein Q^2 is a structure selected from:



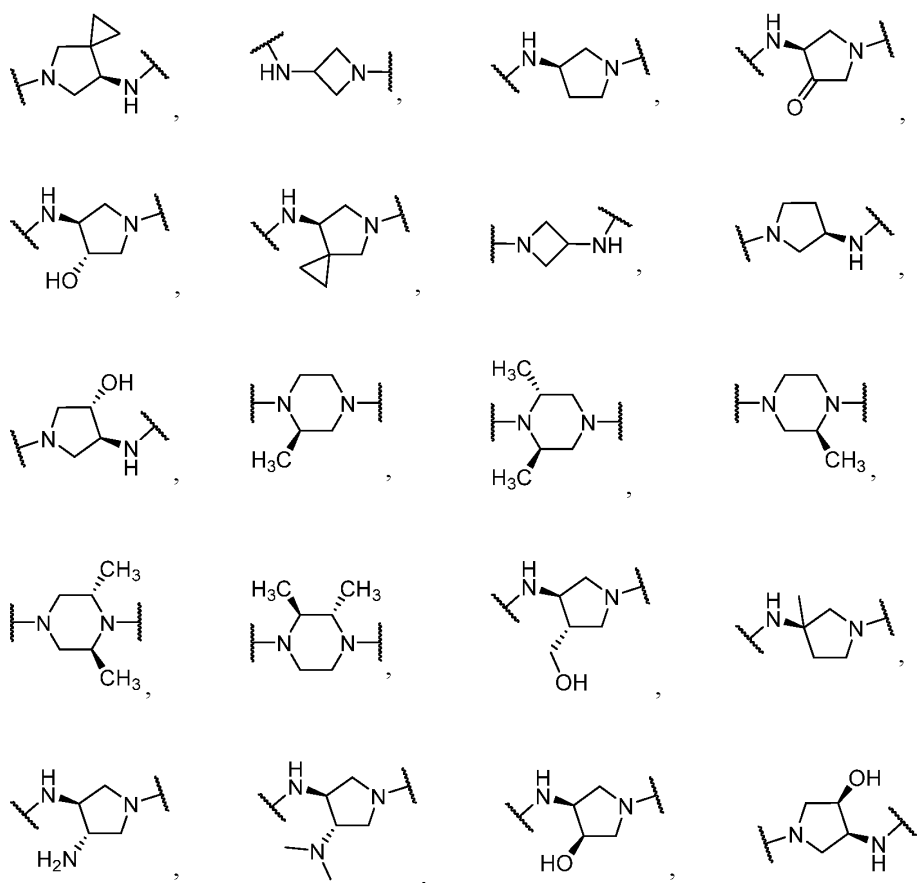


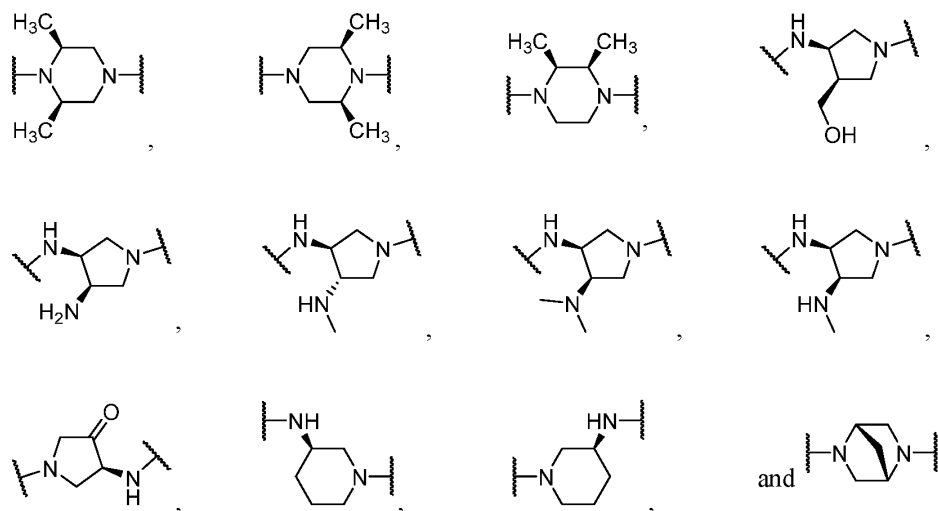
3. The compound of claim 1, wherein Q^2 is a structure selected from:



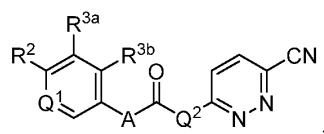


4. The compound of claim 1, wherein Q^2 is a structure selected from:



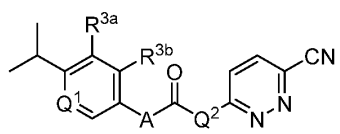


5. The compound of claim 1, wherein the compound has a structure represented by a formula:



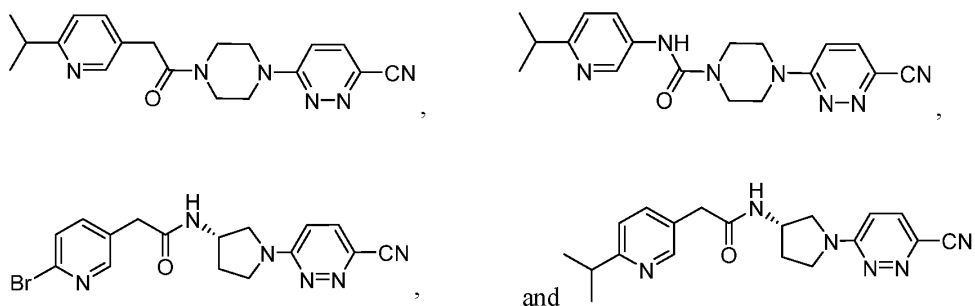
or a pharmaceutically acceptable salt thereof.

6. The compound of claim 1, wherein the compound has a structure represented by a formula:



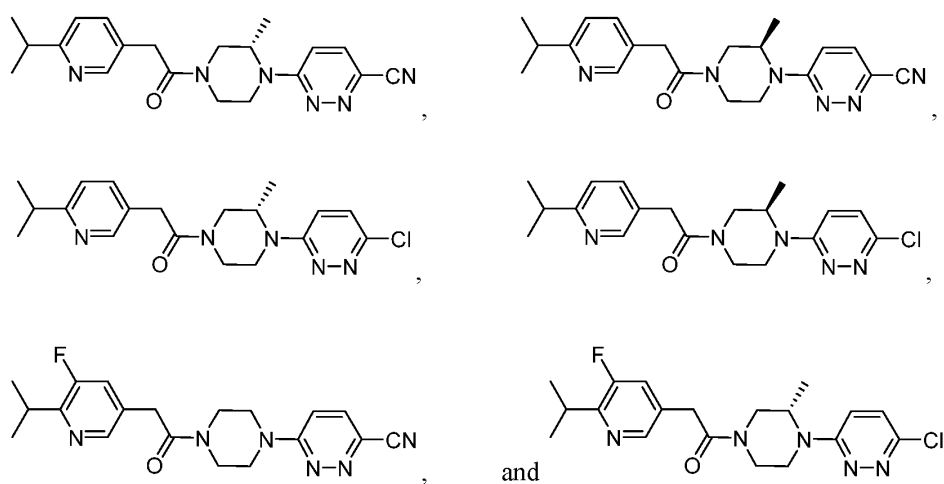
or a pharmaceutically acceptable salt thereof.

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

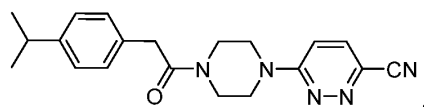


or a pharmaceutically acceptable salt thereof.

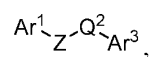
8. The compound of claim 1, wherein the compound is selected from:



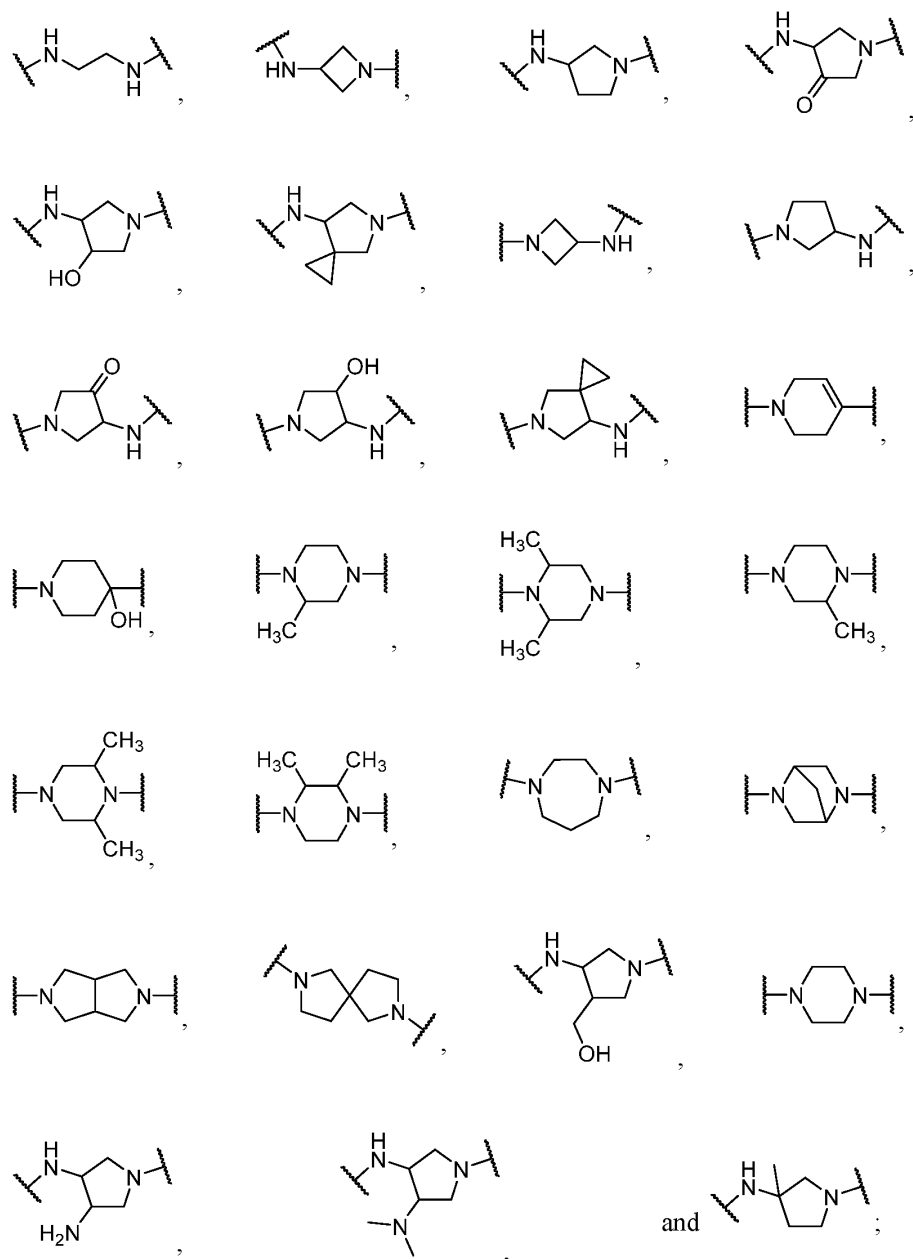
9. The compound of claim 1, wherein the compound is:



10. A compound having a structure represented by a formula:



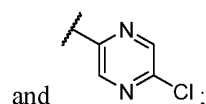
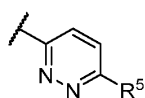
wherein Q² is a structure selected from:



wherein Z is selected from $\text{O}(\text{C}=\text{O})$, CF_2CO , COCH_2 , CH_2CO , , CO , CH_2SO_2 , SO_2 , NHCO , $\text{N}(\text{CH}_3)\text{CO}$, and $\text{CH}(\text{OH})\text{CO}$;

wherein Ar¹ is selected from aryl and heteroaryl and substituted with 1, 2, or 3 groups independently selected from halogen, -NO₂, -CN, -OH, -SH, -NH₂, C1-C8 acyclic alkyl, C1-C8 acyclic alkenyl, C1-C8 hydroxyalkyl, C1-C8 monohaloalkyl, C1-C8 polyhaloalkyl, C1-C8 alkoxy, C1-C8 monohaloalkoxy, C1-C8 polyhaloalkoxy, C1-C8 acyclic alkylamino, (C1-C8)(C1-C8) dialkylamino, -CO(C1-C8 acyclic alkyl), and cyclopropyl, cyclobutyl, and oxetene, wherein the cyclopropyl, cyclobutyl, and oxetene are optionally substituted with 1, 2, or 3 groups independently selected from -OH, C1-C4 alkyl, and C1-C4 alkoxy; and

wherein Ar³ is a structure selected from:



wherein R⁵, when present, is selected from CN, halogen, -NO₂, SO₂NH₂, and SO₂CH₃,

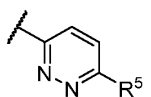
provided that if R⁵ is CN and Z is CO then Ar¹ is not substituted with C1-C8 monohaloalkyl or C1-C8 polyhaloalkyl;

provided that if R⁵ is halogen then Ar¹ is selected from 5- and 6-membered heteroaryl and Z cannot be CO,

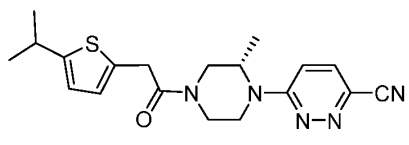
or a pharmaceutically acceptable salt thereof.

11. The compound of claim 10, wherein Ar¹ is selected from aryl and heteroaryl and substituted with 1, 2, or 3 groups independently selected from halogen, -NO₂, -CN, -OH, -SH, -NH₂, C1-C8 acyclic alkyl, C1-C8 acyclic alkenyl, C1-C8 hydroxyalkyl, C1-C8 monohaloalkyl, C1-C8 polyhaloalkyl, C1-C8 alkoxy, C1-C8 monohaloalkoxy, C1-C8 polyhaloalkoxy, C1-C8 acyclic alkylamino, (C1-C8)(C1-C8) dialkylamino, -CO(C1-C8 acyclic alkyl), and cyclopropyl.

12. The compound of claim 10, wherein Ar³ is:

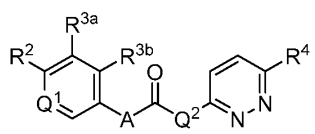


13. The compound of claim 10, wherein R⁵ is CN.
14. The compound of claim 10, wherein R⁵ is -Cl.
15. The compound of claim 10, wherein R⁵ is selected from halogen, -NO₂, SO₂NH₂, and SO₂CH₃.
16. The compound of claim 10, wherein the compound is:



or a pharmaceutically acceptable salt thereof.

17. A method of treating a disorder associated with pantothenate kinase activity in a subject, the method comprising administering to the subject an effective amount of at least one compound having a structure represented by a formula:

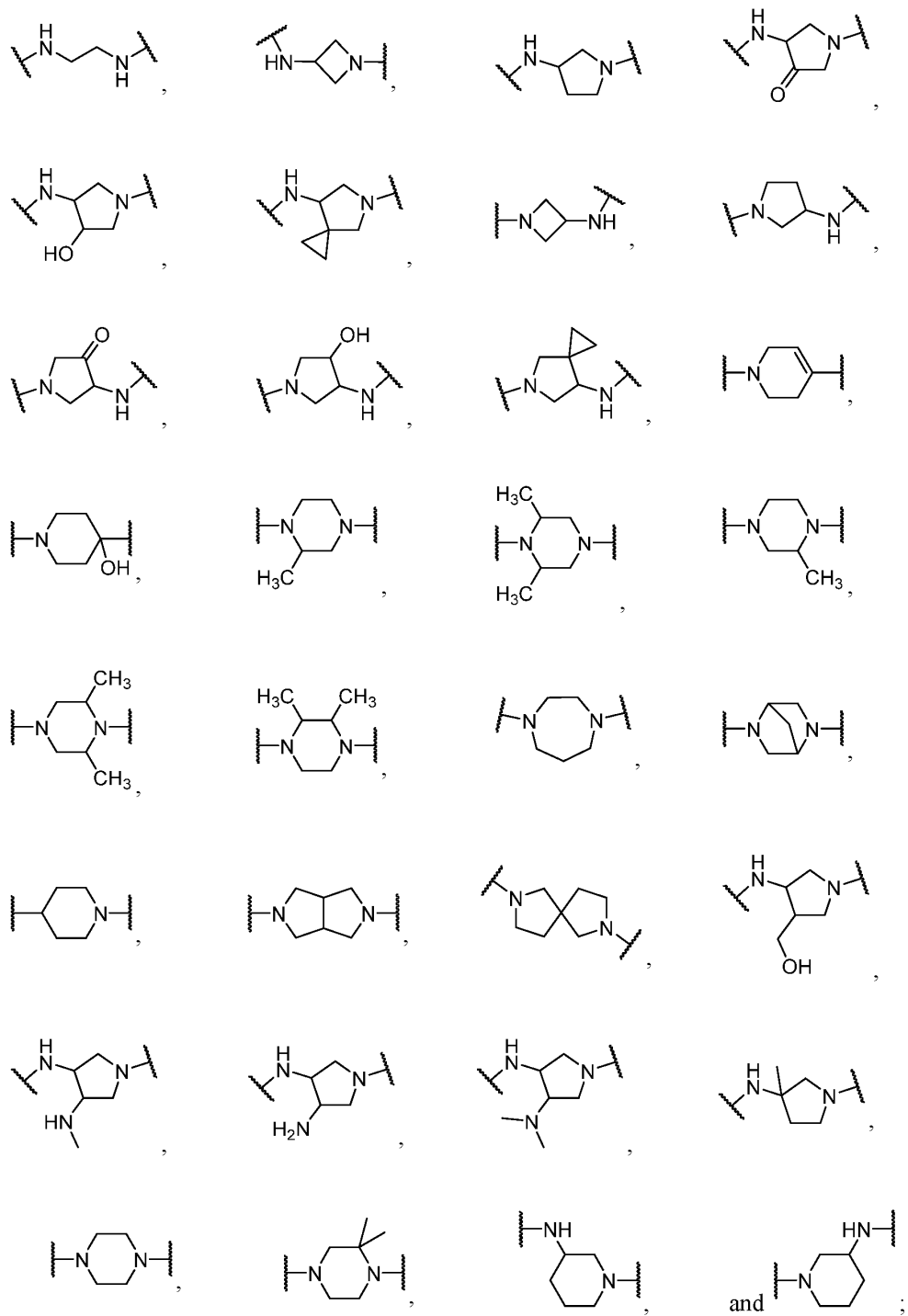


wherein A is selected from O, CO, CH₂, CF₂, NH, N(CH₃), and CH(OH);

wherein Q¹ is CH; and wherein R² is selected from -SCH₃, C1-C8 acyclic alkyl, C1-C8 acyclic alkenyl, C1-C8 monohaloalkyl, C1-C8 polyhaloalkyl, C1-C8 alkoxyhaloalkyl, cyclopropyl, cyclobutyl, and oxetane, wherein the cyclopropyl, cyclobutyl, and oxetane are optionally substituted with 1, 2, or 3 groups independently selected from -OH, C1-C4 alkyl, and C1-C4 alkoxy; or

wherein Q¹ is N; and R² is selected from halogen, -SCH₃, C1-C8 acyclic alkyl, C1-C8 acyclic alkenyl, C1-C8 monohaloalkyl, C1-C8 polyhaloalkyl, C1-C8 alkoxyhaloalkyl, cyclopropyl, cyclobutyl, and oxetane, wherein the cyclopropyl, cyclobutyl, and oxetane are optionally substituted with 1, 2, or 3 groups independently selected from -OH, C1-C4 alkyl, and C1-C4 alkoxy;

wherein Q² is a structure selected from:



wherein each of R^{3a} and R^{3b} is independently selected from hydrogen, halogen, -OH, C1-C4 alkoxy, and C1-C4 alkyl; and

wherein R⁴ is selected from hydrogen, halogen, -CN, SO₂NH₂, SO₂CH₃, SO₂CF₃, and NO₂,

or a pharmaceutically acceptable salt thereof.

18. The method of claim 17, wherein the disorder associated with pantothenate kinase activity is associated with misregulated and/or elevated coenzyme A resulting in hyperglycemia.
19. The method of claim 17, wherein the disorder associated with pantothenate kinase activity is associated with a deficiency of pantothenate kinase or coenzyme A resulting in neurodegeneration.
20. The method of claim 17, wherein the disorder associated with pantothenate kinase activity is selected from PKAN and diabetes.