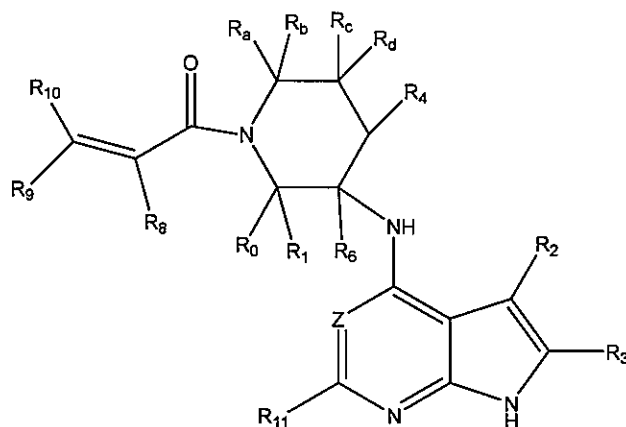


CLAIMS

1. The compound having the structure:



- 5 or a pharmaceutically acceptable salt or solvate thereof, or an enantiomer or diastereomer thereof, and wherein

R_2 is selected from the group consisting of hydrogen, deuterium, C_1 - C_6 linear or branched chain alkyl, C_3 - C_6 cycloalkyl, C_6 - C_{10} aryl, monocyclic or bicyclic heteroaryl, comprising 5- and/or 6-membered rings, (aryl) C_1 - C_6 linear or branched chain alkyl, (heteroaryl) C_1 - C_6 linear or branched chain alkyl, (heterocyclic) C_1 - C_6 linear or branched chain alkyl, (C_1 - C_6 linear or branched chain alkyl)aryl, (C_1 - C_6 linear or branched chain alkyl)heteroaryl, (C_1 - C_6 linear or branched chain alkyl)heterocyclic, C_1 - C_6 linear or branched chain perfluoroalkyl, C_1 - C_6 linear or branched chain alkoxy, C_1 - C_6 linear or branched chain perfluoroalkoxy, halogen, cyano, hydroxyl, amino, carboxy, aminocarbonyl, (C_1 - C_6 linear or branched chain alkyl)aminocarbonylamino, (C_1 - C_6 linear or branched chain alkyl)aminocarbonyl, $-SOR_{12}$, $-SO_2R_{12}$, $-NR_{13}SO_2R_{12}$, $-SO_2NR_{13}R_{14}$, and $-NR_{13}SO_2NR_{14}R_{15}$; where said alkyl, aryl and heteroaryl is independently optionally substituted with one or more substituents selected from the group consisting of halo, hydroxy, methoxy, amino, cyano, alkylamino, dialkylamino, CF_3 , aminocarbonyl, (C_1 - C_6 linear or branched chain alkyl)aminocarbonyl, and C_3 - C_6 cycloalkyl;

R₃ is selected from the group consisting of hydrogen, deuterium, C₁-C₆ linear or branched chain alkyl, C₁-C₆ linear or branched chain perfluoroalkyl, halogen, and cyano;

5 R_a, R_b, R_c and R_d are independently selected from hydrogen, C₁-C₆ linear or branched chain alkyl, C₁-C₆ linear or branched chain perfluoroalkyl, alkylaryl, (aryl)C₁-C₆ linear or branched chain alkyl, (heteroaryl)C₁-C₆ linear or branched chain alkyl, heteroaryl, halogen, cyano, hydroxyl, C₁-C₆ linear or branched chain alkoxy, amino, carboxy, aminocarbonyl, (heterocyclic)C₁-C₆ linear or branched chain alkyl,
 10 (C₁-C₆ linear or branched chain alkyl)aryl, (C₁-C₆ linear or branched chain alkyl)heteroaryl, and (C₁-C₆ linear or branched chain alkyl)heterocyclic, where said alkyl is further optionally substituted with one or more substituents selected from the group consisting of halo, hydroxy, methoxy, amino, alkylamino, dialkylamino, CF₃, and C₃-C₆ cycloalkyl;

15 R₀, R₁, R₄, R₆ are independently selected from hydrogen, C₁-C₆ linear or branched chain alkyl, C₁-C₆ linear or branched chain perfluoroalkyl, C₆-C₁₀ aryl, monocyclic or bicyclic heteroaryl, comprising 5- and/or 6-membered rings, (aryl)C₁-C₆ linear or branched chain alkyl, (heteroaryl)C₁-C₆ linear or branched chain alkyl,
 20 heteroaryl, halogen, hydroxyl, C₁-C₆ linear or branched chain alkoxy, amino, carboxy, aminocarbonyl, (heterocyclic)C₁-C₆ linear or branched chain alkyl, (C₁-C₆ linear or branched chain alkyl)aryl, (C₁-C₆ linear or branched chain alkyl)heteroaryl, and (C₁-C₆ linear or branched chain alkyl)heterocyclic, where said alkyl is further optionally substituted with one or more substituents selected from the group consisting of
 25 halo, hydroxy, methoxy, amino, alkylamino, dialkylamino, CF₃, and C₃-C₆ cycloalkyl; where, alternatively, R₀ or R₁, and/or R₆, respectively together with either of R₄, R_a, R_b, R_c or R_d, may independently form a bond or a C₁-C₆ linear alkyl chain; and/or, alternatively, R₄, respectively together with either of R_a, R_b, R_c or R_d, may independently form a bond or a C₁-C₆ linear alkyl chain;

30 R₈, R₉ and R₁₀ are hydrogen ;

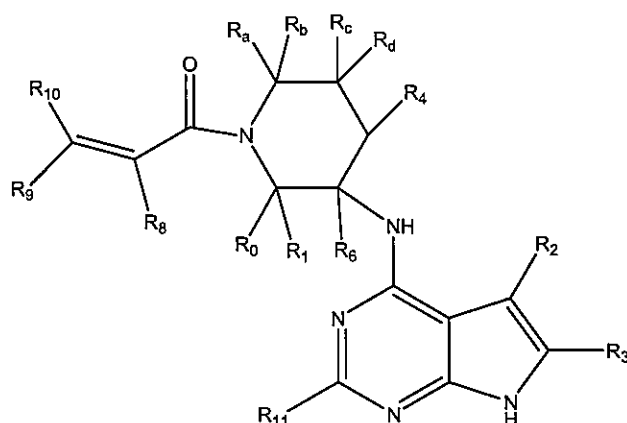
Z is N.

R₁₁ is hydrogen; and,

- 5 R₁₂, R₁₃, R₁₄ and R₁₅ are independently selected from hydrogen, C₁-C₆ linear or branched chain alkyl, C₁-C₆ linear or branched chain perfluoroalkyl, C₆-C₁₀ aryl, alkylaryl, and (aryl)C₁-C₆ linear or branched chain alkyl.

2. The compound of claim 1 having the structure:

10



or a pharmaceutically acceptable salt or solvate thereof, or an enantiomer or diastereomer thereof, and wherein

- 15 R₂ is hydrogen;

R₃ is hydrogen;

- 20 R_a, R_b, R_c and R_d are independently selected from hydrogen, C₁-C₆ linear or branched chain alkyl, C₁-C₆ linear or branched chain perfluoroalkyl, aryl, alkylaryl, (aryl)C₁-C₆ linear or branched chain alkyl, (heteroaryl)C₁-C₆ linear or branched chain alkyl, heteroaryl, halogen, cyano, hydroxyl, C₁-C₆ linear or branched chain alkoxy, amino, carboxy, aminocarbonyl, (heterocyclic)C₁-C₆ linear or branched chain alkyl, (C₁-C₆ linear or branched chain alkyl)aryl, (C₁-C₆ linear or branched chain al-
- 25 kyl)heteroaryl, and (C₁-C₆ linear or branched chain alkyl)heterocyclic, where said al-

kyl is further optionally substituted with one or more substituents selected from the group consisting of halo, hydroxy, methoxy, amino, alkylamino, dialkylamino, CF₃, and C₃-C₆ cycloalkyl;

5 R₀, R₁, R₄, R₆, R₈, R₉ and R₁₀ are hydrogen; and,

R₁₁ is hydrogen.

10 3. The compound compound of claim 1 selected from the group consisting of:

(R)-1-(3-(5-chloro-7H-pyrrolo[2,3-d]pyrimidin-4-ylamino)piperidin-1-yl)prop-2-en-1-one;

1-((2S,5R)-5-(7H-pyrrolo[2,3-d]pyrimidin-4-ylamino)-2-methylpiperidin-1-yl)prop-2-en-1-one;

15 1-((3R,5S)-3-(7H-pyrrolo[2,3-d]pyrimidin-4-ylamino)-5-hydroxypiperidin-1-yl)prop-2-en-1-one;

(R)-1-(3-(5-(2-methoxyethyl)-7H-pyrrolo[2,3-d]pyrimidin-4-ylamino)piperidin-1-yl)prop-2-en-1-one;

20 1-(5-(7H-pyrrolo[2,3-d]pyrimidin-4-ylamino)-2-(hydroxymethyl)piperidin-1-yl)prop-2-en-1-one;

1-((3R,5S)-3-(7H-pyrrolo[2,3-d]pyrimidin-4-ylamino)-5-fluoropiperidin-1-yl)prop-2-en-1-one;

1-((3R,4S)-3-(7H-pyrrolo[2,3-d]pyrimidin-4-ylamino)-4-methylpiperidin-1-yl)prop-2-en-1-one;

25 1-((3S,4R)-3-(7H-pyrrolo[2,3-d]pyrimidin-4-ylamino)-4-fluoropiperidin-1-yl)prop-2-en-1-one;

1-((2S,5R)-5-(7H-pyrrolo[2,3-d]pyrimidin-4-ylamino)-2-ethylpiperidin-1-yl)prop-2-en-1-one;

(R)-1-(3-(7H-pyrrolo[2,3-d]pyrimidin-4-ylamino)piperidin-1-yl)prop-2-en-1-one;

30 1-((2R,5R)-5-(7H-pyrrolo[2,3-d]pyrimidin-4-ylamino)-2-(hydroxymethyl)piperidin-1-yl)prop-2-en-1-one;

1-((3R,5R)-3-(7H-pyrrolo[2,3-d]pyrimidin-4-ylamino)-5-fluoropiperidin-1-yl)prop-2-en-1-one;

(R)-1-(3-(5-methyl-7H-pyrrolo[2,3-d]pyrimidin-4-ylamino)piperidin-1-yl)prop-2-en-1-one;

5 1-((3R,5S)-3-(7H-pyrrolo[2,3-d]pyrimidin-4-ylamino)-5-methylpiperidin-1-yl)prop-2-en-1-one;

1-((2S,5R)-5-(5-(2-methoxyethyl)-7H-pyrrolo[2,3-d]pyrimidin-4-ylamino)-2-methylpiperidin-1-yl)prop-2-en-1-one;

10 1-((3R,5S)-3-(7H-pyrrolo[2,3-d]pyrimidin-4-ylamino)-5-methylpiperidin-1-yl)prop-2-en-1-one;

1-((3R,4S)-3-(7H-pyrrolo[2,3-d]pyrimidin-4-ylamino)-4-methylpiperidin-1-yl)prop-2-en-1-one;

(R)-1-(3-(5-ethyl-7H-pyrrolo[2,3-d]pyrimidin-4-ylamino)piperidin-1-yl)prop-2-en-1-one;

15 1-((2S,5R)-5-(7H-pyrrolo[2,3-d]pyrimidin-4-ylamino)-2-methylpiperidin-1-yl)prop-2-en-1-one;

(R)-1-(3-(5-fluoro-7H-pyrrolo[2,3-d]pyrimidin-4-ylamino)piperidin-1-yl)prop-2-en-1-one;

20 (R)-4-(1-acryloylpiperidin-3-ylamino)-7H-pyrrolo[2,3-d]pyrimidine-5-carbonitrile; and,

(3R,5R)-5-(7H-pyrrolo[2,3-d]pyrimidin-4-ylamino)-1-acryloylpiperidine-3-carbonitrile; or, a pharmaceutically acceptable salt thereof.

4. A compound of claim 1 wherein the compound is 1-(3R,4S)-3-(7H-pyrrolo[2,3-d]pyrimidin-4-yl)amino)-4-methylpiperidin-1-yl)prop-2-en-1-one, or, a
25 pharmaceutically acceptable salt thereof.

5. A compound of claim 1 wherein the compound is 1-((2S,5R)-5-(7H-pyrrolo[2,3-d]pyrimidin-4-ylamino)-2-methylpiperidin-1-yl)prop-2-en-1-one;
or, a pharmaceutically acceptable salt thereof.

6. A pharmaceutical or a veterinary composition comprising a compound of claim 1, or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier.