Z_2 is S, O, N, or NR^3;

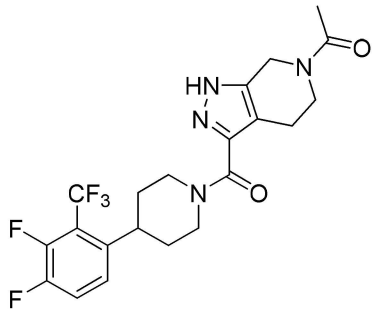
R^3 is H, C_1-C_4 alkyl, or oxetane; and

B is a substituted or unsubstituted fused 5-, 6-, or 7- membered ring structure;

wherein the composition comprises a solid dispersion comprising a dispersion polymer.

[0004a] In one aspect, provided herein is a pharmaceutical composition comprising a solid dispersion, wherein the solid dispersion comprises:

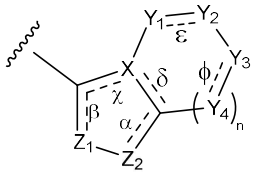
(i) a compound of Formula (I) having the structure



, or a pharmaceutically acceptable salt, crystalline, solvate, polymorph, N-oxide, or stereoisomer thereof; and

(ii) a dispersion polymer.

[0005] In certain examples, A has the structure



wherein:

n is 0, 1, or 2;

α, β, χ, δ, ε, and ϕ are each independently absent or present, and when present each is a bond;

Z_1 is S, O, or N;

Z_2 is S, O, N or NR^3,

wherein R^3 is H, C_1-C_4 alkyl, or oxetane;

X is C;

Y_1, Y_2, Y_3 and each occurrence of Y_4 are each independently CR^4, $C(R^5)_2$, NR^6, O, N, SO_2, or –(C=O)-, wherein:

R^4 is H, halogen, C_1-C_{10} alkyl, C_1-C_{10} cycloalkyl, -O(C_1-C_{10} alkyl), -C(O)OH, -C(O)O(C_1-C_{10} alkyl), -C(O)NH_2, -C(O)NH (C_1-C_4 alkyl), -C(O)N(C_1-C_4 alkyl)$_2$, -

NHC(O)NH(C_1-C_{10} alkyl), -NHC(O)N(C_1-C_4 alkyl)$_2$, -SO_2NH(C_1-C_{10} alkyl), -SO_2N(C_1-C_{l0} alkyl)$_2$, -CN, or -CF_3;

R^5 is H or C_1-C_{10} alkyl; and

R^6 is H, C_1-C_{10} alkyl, C_3-C_6 cycloalkyl, -(C_1-C_{10} alkylene)CF_3, -(C_1- C_{10} alkylene)OCH_3, -(C_1-C_{10} alkylene)-halogen, -SO_2(C_1-C_{10} alkyl), -SO_2(C_1-C_{10} alkylene) -CF_3, -SO_2(C_1-C_{10} alkylene)OCH_3, -SO_2(C_1-C_{10} alkylene)-halogen, -C(O)(C_1-C_{10} alkyl), -C(O)(C_1-C_{10} alkylene)CF_3, -C(O)(C_1-C_{10} alkylene)OCH_3, -C(O)(C_1-C_{10} alkylene)-halogen, -C(O)NH(C_1-C_{10} alkyl), -C(O)N(C_1-C_{10} alkyl)$_2$, -(C_1-C_{10} alkyl)C(O)OH, -C(O)NH_2, or oxetane.

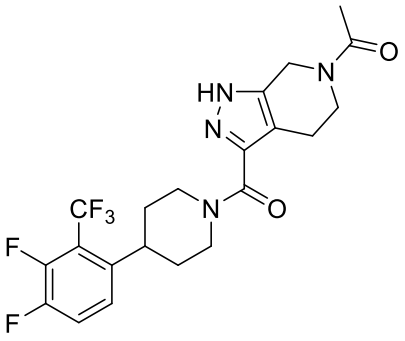
[0006] In certain examples, A has the structure

CLAIMS

We Claim:

1. A pharmaceutical composition comprising a solid dispersion, wherein the solid dispersion comprises:

   (i) a compound of Formula (I) having the structure



, or a pharmaceutically acceptable salt, crystalline, solvate, polymorph, N-oxide, or stereoisomer thereof; and

   (ii) a dispersion polymer.

2. The pharmaceutical composition of claim 1, wherein the compound of Formula (I) is effective to reduce RBP4 concentrations in dosages forms of 1 to 200mg or 5 to 25mg.

3. The pharmaceutical composition of any one of the preceding claims, wherein the compound of Formula (I) is amorphous and molecularly dispersed in the dispersion polymer; selected from the group consisting of hydroxypropyl methylcellulose (HPMC), hydroxypropyl methylcellulose-acetate succinate (HPMC-AS), hydroxypropyl cellulose (HPC), methyl cellulose, hydroxyethyl methyl cellulose, hydroxyethyl cellulose acetate, hydroxyethyl ethyl cellulose, polyvinyl alcohol polyvinyl acetate copolymers, polyethylene glycol, polyethylene glycol polypropylene glycol copolymers, polyvinylpyrrolidone (PVP), polyethylene polyvinyl alcohol copolymers, polyoxyethylene-polyoxypropylene block copolymers, and combinations thereof.

4. The pharmaceutical composition of any one of the preceding claims, wherein the dispersion polymer comprises 1-99% by weight, 20-80% by weight, or 40-60% by weight of the solid dispersion.

5. The pharmaceutical composition of any one of the preceding claims, wherein the ratio of the compound of Formula (I):dispersion polymer is 20:80 (w/w) or 40:60 (w/w) in the solid dispersion.
6. The pharmaceutical composition of claim 4 or 5, wherein the dispersion polymer is HPMC-AS having an acetyl content from 7-11 wt%, a succinyl content from 10-14 wt%, a methoxyl content from 21-25 wt%, and a hydroxypropyl content from 5-9 wt%.
7. The pharmaceutical composition of any one of claims 1-6, wherein the dispersion polymer comprises polyvinylpyrrolidone (PVP); wherein the PVP is present in a ratio with the compound of Formula (I) from 10:1 to 1:1.
8. The pharmaceutical composition of claim 7, wherein the PVP has a molecular weight average molecular weight from 7,000 Daltons to 11,000 Daltons.