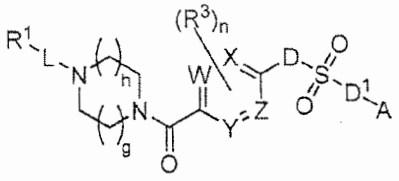
CLAIMS

What is claimed is:

1. A compound of formula (I)



(I)

or a pharmaceutically acceptable salt thereof, wherein

W, X, Y and Z are each independently selected from CH or N;

D and D^1 are independently selected from a bond or NR^b;

A is optionally substituted bicyclic heteroaryl;

L is a bond, -C(O)-, $-(CR^cR^c)_m-$, -OC(O)-, $-(CR^cR^c)_m$-OC(O)-, $-(CR^cR^c)_m$-C(O)-, $-NR^bC(S)-$, or $-NR^bC(O)-$;

R^1 is selected from alkyl, cycloalkyl, aryl, heteroaryl, and heterocyclyl; each of which is substituted with 0-5 occurrences of R^d;

each R^3 is independently selected from halo, haloalkyl, alkyl, hydroxyl and $-OR^a$ or two adjacent R^3 taken together with the carbon atoms to which they are attached form an optionally substituted cyclyl;

each R^a is independently selected from alkyl, acyl, hydroxyalkyl and haloalkyl;

each R^b is independently selected from hydrogen and alkyl;

each R^c is independently selected from hydrogen, halo, alkyl, alkoxy and halo alkoxy or two R^c taken together with the carbon atoms to which they are attached form an optionally substituted cycloalkyl;

each R^d is independently selected from halo, haloalkyl, haloalkoxy, alkyl, alkynyl, nitro, cyano, hydroxyl, $-C(O)R^a$, $-OC(O)R^a$, $-C(O)OR^a$, $-SR^a$, $-NR^aR^b$ and $-OR^a$, or two R^d taken together with the carbon atoms to which they are attached form an optionally substituted heterocyclyl;

n is 0, 1, or 2;

m is 1, 2 or 3;

h is 0, 1, 2; and

g is 0, 1 or 2.

2. The compound of claim 1, wherein h is 1 and g is 1.

3. The compound of claim 2, wherein W, X, Y and Z are CH.

4. The compound of claim 3, wherein D is NR^b and D^1 is a bond.

5. The compound of claim 4, wherein R^b is H, methyl or ethyl.

6. The compound of any one of claims 1-5, wherein L is a bond, $-(CR^cR^c)_m-$, $-NR^bC(O)-$, $-(CR^cR^c)_m-C(O)-$, -C(O)-, or -O(CO)-.

7. The compound of claim 6, wherein L is a bond.

8. The compound of claim 7, wherein R^1 is alkyl, aryl or heteroaryl substituted with 0-5 occurrences of R^d.

9. The compound of claim 6, wherein L is $-(CR^cR^c)_m-$.

10. The compound of claim 9, wherein R^1 is cycloalkyl, aryl, heteroaryl or heterocyclyl substituted with 0-5 occurrences of R^d.

11. The compound of claim 6, wherein L is $-NR^bC(O)-$ and R^b is hydrogen.

12. The compound of claim 11, wherein R^1 is aryl substituted with 0-5 occurrences of R^d.

13. The compound of claim 6, wherein L is $-(CR^cR^c)_m-C(O)-$.

14. The compound of claim 13,wherein R^1 is cycloalkyl, aryl or heteroaryl substituted with 0-5 occurrencs of R^d.

15. The compound of claim 6, wherein L is -C(O)-.

16. The compound of claim 15, wherein R^1 is aryl, alkyl, or heteroaryl substituted with 0-5 occurrencs of R^d.

17. The compound of claim 6, wherein L is –OC(O)-.

18. The compound of claim 17, wherein R^1 is alkyl, aryl or heterocyclyl substituted with 0-5 occurrences of R^d.

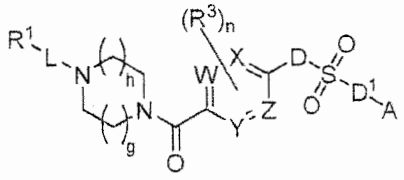
19. The compound of claim 6, wherein L is $-(CR^cR^c)_m$-OC(O)-.

20. The compound of claim 19, wherein R^1 is heterocyclyl or cycloalkyl substituted with 0-5 occurrences of R^d.

21. The compound of any one of claims 6-20, wherein n is 0.

22. The compound of any one of claims 6-20, wherein n is 1 and R^3 is CH_3, CH_2CH_3, OCH_3, OCH_2CH_3, OH, F, Cl, or CF_3.

23. A pharmaceutical composition comprising a compound formula (I):



(I)

or a pharmaceutically acceptable salt thereof, wherein:

W, X, Y and Z are each independently selected from CH or N;

D and D^1 are independently selected from a bond or NR^b;

A is optionally substituted aryl or optionally substituted heteroaryl;

L is a bond, -C(O)-, -$(CR^cR^c)_m$-, -OC(O)-, -$(CR^cR^c)_m$-OC(O)-, -$(CR^cR^c)_m$-C(O)-, -$NR^bC(S)$-, or -$NR^bC(O)$- (wherein the point of the attachment to R^1 is on the left-hand side);

R^1 is selected from alkyl, cycloalkyl, aryl, heteroaryl, and heterocyclyl; each of which is substituted with 0-5 occurrences of R^d;

each R^3 is independently selected from halo, haloalkyl, alkyl, hydroxyl and -OR^a, or two adjacent R^3 taken together with the carbon atoms to which they are attached form an optionally substituted heterocyclyl;each R^a is independently selected from alkyl, acyl, hydroxyalkyl and haloalkyl;

each R^b is independently selected from hydrogen and alkyl;

each R^c is independently selected from hydrogen, halo, alkyl, alkoxy and halo alkoxy or two R^c taken together with the carbon atoms to which they are attached form an optionally substituted cycloalkyl;

each R^d is independently selected from halo, haloalkyl, haloalkoxy, alkyl, alkynyl, nitro, cyano, hydroxyl, -$C(O)R^a$, -$OC(O)R^a$, -$C(O)OR^a$, -SR^a, -NR^aR^b and -OR^a, or two R^d taken together with the carbon atoms to which they are attached form an optionally substituted heterocyclyl;

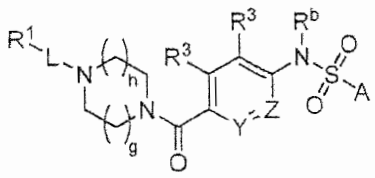
n is 0, 1, or 2;

m is 1, 2 or 3;

h is 0, 1, 2; and

g is 0, 1 or 2.

24. The pharmaceutical composition of claim 23, wherein the compound is a compound of formula (Id):



(Id).

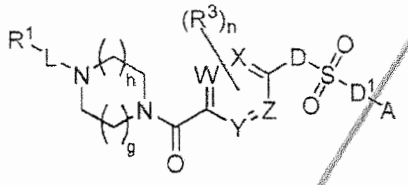
25. A pharmaceutical composition comprising a compound of any one of claims 1-22.

26. A pharmaceutical composition comprising a compound represented in Figure 1 or pharmaceutically acceptable salt thereof.

27. A method of modulating PKM2 activity in a subject in need thereof, the method comprising administering to said subject a pharmaceutical composition of any one of claims 23-26.

28. A method of treating a cancer associated with PKM2 activity in a subject in need thereof, the method comprising administering to a subject a pharmaceutical composition of any one of claims 23-27.

29. A compound of formula (I) or a pharmaceutically acceptable salt thereof:



(I)

wherein:

W, X, Y and Z are each independently selected from CH or N;

D and D^1 are independently selected from a bond or NR^b;

A is optionally substituted bicyclic heteroaryl;

L is a bond, -C(O)-, $-(CR^cR^c)_m$-, -OC(O)-, $-(CR^cR^c)_m$-OC(O)-, $-(CR^cR^c)_m$-C(O)-, $-NR^bC(S)$-, or $-NR^bC(O)$-;

R^1 is selected from alkyl, cycloalkyl, aryl, heteroaryl, and heterocyclyl; each of which is substituted with 0-5 occurrences of R^d;

each R^3 is independently selected from halo, haloalkyl, alkyl, hydroxyl and $-OR^a$ or two adjacent R^3 taken together with the carbon atoms to which they are attached form an optionally substituted cyclyl;

each R^a is independently selected from alkyl, acyl, hydroxyalkyl and haloalkyl;

each R^b is independently selected from hydrogen and alkyl;

each R^c is independently selected from hydrogen, halo, alkyl, alkoxy and halo alkoxy or two R^c taken together with the carbon atoms to which they are attached form an optionally substituted cycloalkyl;

each R^d is independently selected from halo, haloalkyl, haloalkoxy, alkyl, alkynyl, nitro, cyano, hydroxyl, $-C(O)R^a$, $-OC(O)R^a$, $-C(O)OR^a$, $-SR^a$, $-NR^aR^b$ and $-OR^a$, or two R^d taken together with the carbon atoms to which they are attached form an optionally substituted heterocyclyl;

n is 0, 1, or 2;

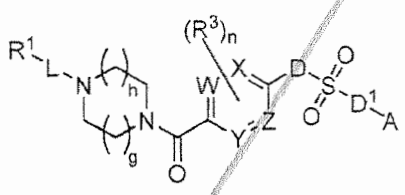
m is 1, 2 or 3;

h is 0, 1, 2; and

g is 0, 1 or 2;

for use as a medicament.

30. A use of a compound of formula (I) or a pharmaceutically acceptable salt thereof:



(I)

wherein:

W, X, Y and Z are each independently selected from CH or N;

D and D^1 are independently selected from a bond or NR^b;

A is optionally substituted bicyclic heteroaryl;

L is a bond, $-C(O)-$, $-(CR^cR^c)_m-$, $-OC(O)-$, $-(CR^cR^c)_m-OC(O)-$, $-(CR^cR^c)_m-C(O)-$, $-NR^bC(S)-$, or $-NR^bC(O)-$;

R^1 is selected from alkyl, cycloalkyl, aryl, heteroaryl, and heterocyclyl; each of which is substituted with 0-5 occurrences of R^d;

each R^3 is independently selected from halo, haloalkyl, alkyl, hydroxyl and $-OR^a$ or two adjacent R^3 taken together with the carbon atoms to which they are attached form an optionally substituted cyclyl;

each R^a is independently selected from alkyl, acyl, hydroxyalkyl and haloalkyl;

each R^b is independently selected from hydrogen and alkyl;

each R^c is independently selected from hydrogen, halo, alkyl, alkoxy and halo alkoxy or two R^c taken together with the carbon atoms to which they are attached form an optionally substituted cycloalkyl;

each R^d is independently selected from halo, haloalkyl, haloalkoxy, alkyl, alkynyl, nitro, cyano, hydroxyl, $-C(O)R^a$, $-OC(O)R^a$, $-C(O)OR^a$, $-SR^a$, $-NR^aR^b$ and $-OR^a$, or two R^d taken together with the carbon atoms to which they are attached form an optionally substituted heterocyclyl;

n is 0, 1, or 2;

m is 1, 2 or 3;

h is 0, 1, 2; and

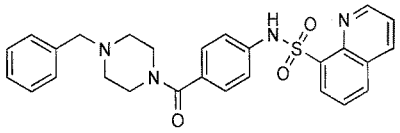
g is 0, 1 or 2;

in the manufacture of a medicament for modulating PKM2 activity in a subject in need thereof or for treating cancer associated with PKM2 activity in a subject in need thereof.

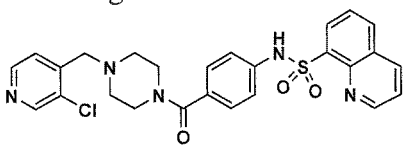
CLAIMS

What is claimed is:

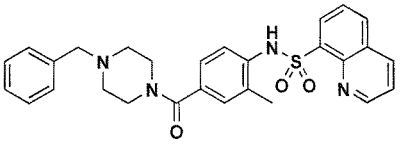
1. A compound having the following structure formula:



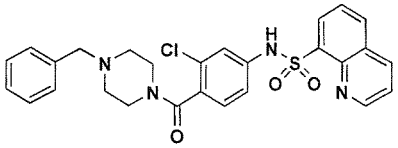
2. A compound having the following structure formula:



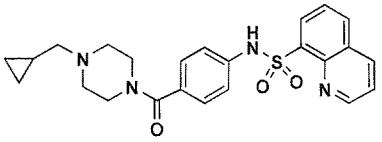
3. A compound having the following structure formula:



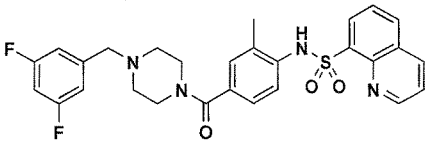
4. A compound having the following structure formula:



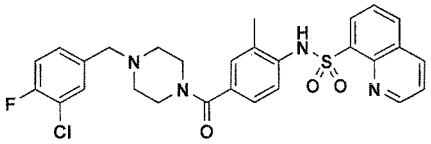
5. A compound having the following structure formula:



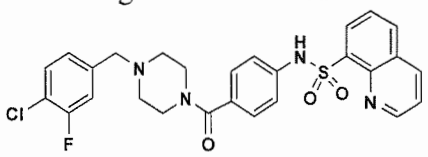
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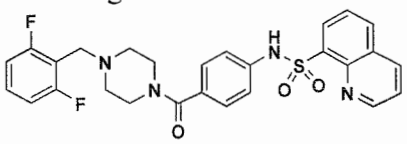
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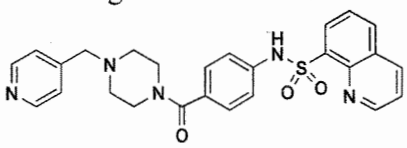
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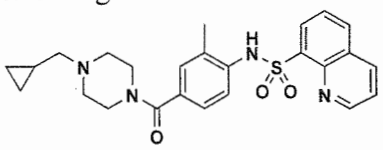
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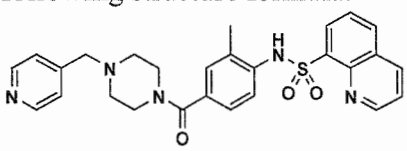
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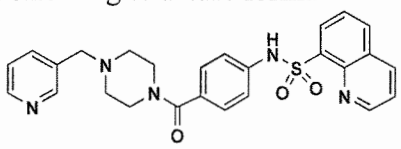
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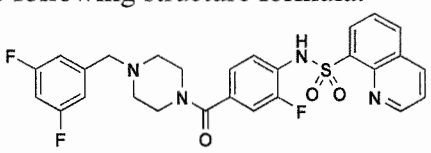
12. A compound having the following structure formula:



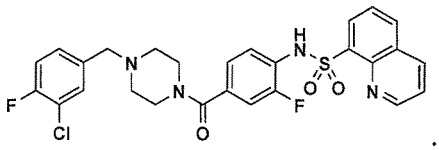
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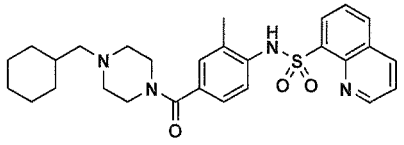
14. A compound having the following structure formula:



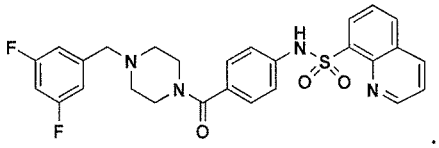
15. A compound having the following structure formula:



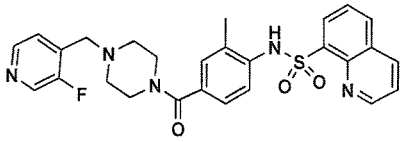
16. A compound having the following structure formula:



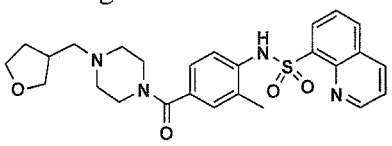
17. A compound having the following structure formula:



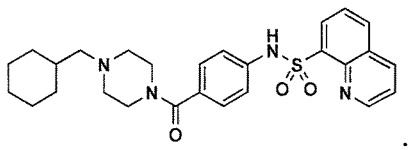
18. A compound having the following structure formula:



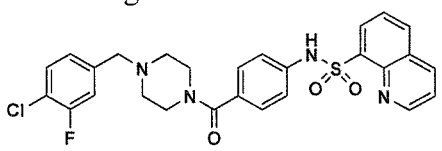
19. A compound having the following structure formula:



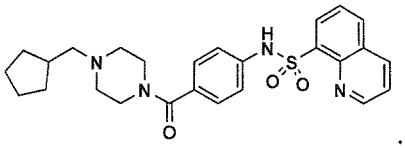
20. A compound having the following structure formula:



21. A compound having the following structure formula:



22. A compound having the following structure formula:



23. A compound having the following structure formula:

