CLAIMS

Claim 1. Use of an antioxidant inflammation modulator (AIM) in the manufacture of a medicament for treating obesity in a subject in need thereof, wherein said AIM is bardoxolone methyl.

Claim 2. The use of claim 1, wherein at least a portion of the bardoxolone methyl is present as a crystalline form having an X-ray diffraction pattern (CuKα) comprising significant diffraction peaks at about 8.8, 12.9, 13.4, 14.2 and 17.4 °2θ.

Claim 3. The use of claim 2, wherein the X-ray diffraction pattern (CuKα) is substantially as shown in FIG. 1A or FIG. 1B.

Claim 4. The use of claim 1, wherein at least a portion of the bardoxolone methyl is present as an amorphous form having an X-ray diffraction pattern (CuKα) with a halo peak at approximately 13.5 °2θ, substantially as shown in FIG. 1C, and a T_g.

Claim 5. The use of claim 4, wherein the T_g value is in the range of about 120 °C to about 135 °C.

Claim 6. The use of claim 5, wherein the T_g value is in the range of about 125 °C to about 130 °C.

Claim 7. The use according to any one of claims 1-6, wherein the sufficient amount of to reduce the subject's weight is a daily dose from about 0.1 mg to about 30 mg of the AIM.

Claim 8. The use according to any one of claims 1-6, where the AIM is administered orally, intraarterially or intravenously.

Claim 9. The use according to any one of claims 1-6, where the AIM is formulated as a hard or soft capsule or a tablet.

Claim 10. The use according to any one of claims 1-6, wherein the AIM is formulated as a solid dispersion comprising (i) the compound and (ii) an excipient.

Claim 11. The use of claim 10, wherein the excipient is a methacrylic acid – ethyl acrylate copolymer (1:1).

Claim 12. The use according to any one of claims 1-11, wherein the subject does not also suffer from renal disease, cardiovascular disease, diabetes, autoimmune disease, respiratory disease, neurodegenerative disease, liver disease, infectious disease, or cancer.

Claim 13. The use according to any one of claims 1-11, where the subject has diabetes.

Claim 14. The use according to any one of claims 1-11, where the subject does not have diabetes.

Claim 15. The use according to any one of claims 1-11, where the subject has chronic kidney disease (CKD) or exhibits one or more symptoms of CKD.

Claim 16. The use according to any one of claims 1-11, where the subject does not have chronic kidney disease (CKD)

Claim 17. The use according to any one of claims 1-11, where the subject does not have stage 4 chronic kidney disease (CKD).

Claim 18. The use according to any one of claims 1-11, where the subject has diabetic nephropathy (DN) or exhibits one or more symptoms of DN.

Claim 19. The use according to any one of claims 1-11, where the subject does not have diabetic nephropathy (DN)

Claim 20. The use according to any one of claims 1-11, where the subject does not exhibit any symptoms of DN.

Claim 21. The use according to any one of claims 1-11, where the subject has insulin resistance or exhibits one or more symptoms of insulin resistance.

Claim 22. The use according to any one of claims 1-11, where the subject does not have insulin resistance.

Claim 23. The use according to any one of claims 1-11, where the subject has glucose intolerance or exhibits one or more symptoms of glucose intolerance.

Claim 24. The use according to any one of claims 1-11, where the subject does not have glucose intolerance.

Claim 25. The use according to any one of claims 1-11, where the subject has cardiovascular disease (CVD) or exhibits one or more symptoms of CVD.

Claim 26. The use according to any one of claims 1-11, where the subject does not have cardiovascular disease (CVD) or does not exhibit any symptoms of CVD.

Claim 27. The use according to any one of claims 1-11, where the subject has fatty liver disease (FLD) or exhibits one or more symptoms of FLD.

Claim 28. The use according to any one of claims 1-11, where the subject does not have fatty liver disease (FLD) or does not exhibit any symptoms of FLD.

Claim 29. The use according to any one of claims 1-11, where the subject has been identified as having cancer.

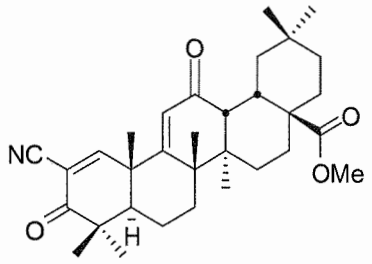
Claim 30. The use according to any one of claims 1-11, where the subject has been identified as not having cancer.

Claim 31. The use according to any one of claims 1-11, where the subject has been identified as having cancer and diabetes.

Claim 32. The use according to any one of claims 1-11, where the subject has been identified as not having cancer and diabetes.

Claim 33. The use according to any one of claims 1-11, where if the sufficient amount were administered to a non-obese subject, the non-obese subject's weight would not be reduced significantly.

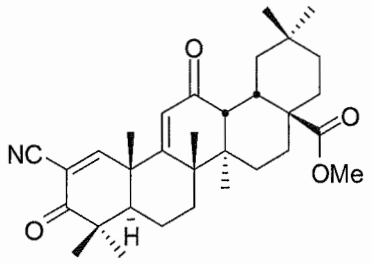
Claim 34. Use of a compound of the formula,



,

in the manufacture of a medicament for reducing a subject's weight, where the subject has been identified as (i) being overweight or obese; and (ii) not having diabetes.

Claim 35. Use of a compound of the formula,



,

in the manufacture of a medicament for reducing a subject's weight, wherein:

(a) at least a portion of the compound is present as an amorphous form having an X-ray diffraction pattern (CuKα) with a halo peak at approximately 13.5 °2θ, substantially as shown in FIG. 1C, and a T_g from about 120 °C to about 135 °C; and

(b) where the subject has been identified as

(i) being overweight or obese; and

(ii) not having diabetes.

Claim 36. The use of claim 35, wherein the subject is a human and the amount is a daily dose from 5 mg to 50 mg.

Claim 37. The use of claim 36, wherein the daily dose is about 10 mg.

Claim 38. The use of claim 36, wherein the daily dose is about 20 mg.

Claim 39. The use of claim 36, wherein the daily dose is about 40 mg.

CLAIMS

Claim 1. Use of an antioxidant inflammation modulator (AIM) in the manufacture of a medicament for reducing weight in a subject in need thereof.

Claim 2. The use of claim 1, where the subject has excess body fat.

Claim 3. The use of claim 1, where the subject is overweight.

Claim 4. The use of claim 1, where the subject's body mass index (BMI) is from 25 kg/m^2 to 30 kg/m^2.

Claim 5. The use of claim 1, where the subject is obese or exhibits one of more symptoms of obesity.

Claim 6. The use of claim 5, where the obesity is class I.

Claim 7. The use of claim 1, where the subject's BMI is from 30 kg/m^2 to 35 kg/m^2.

Claim 8. The use of claim 5, where the obesity is class II.

Claim 9. The use of claim 1, where the subject's BMI is from 35 kg/m^2 to 40 kg/m^2.

Claim 10. The use of claim 5, where the obesity is class III.

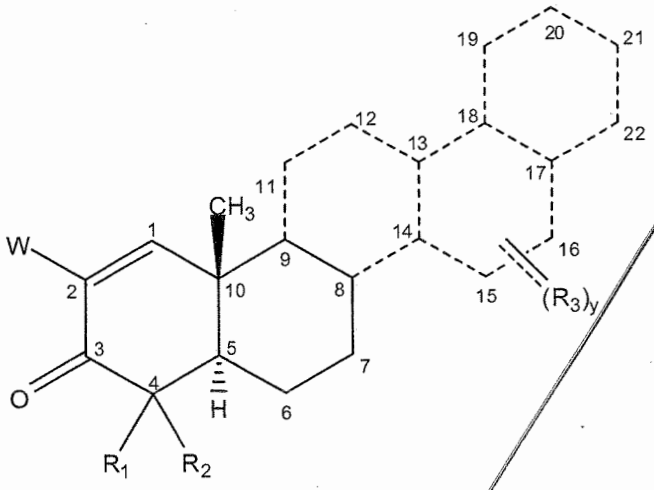
Claim 11. The use of claim 1, where the subject's BMI is from 40 kg/m^2 to 80 kg/m^2.

Claim 12. The use according to any one of claims 1-11, wherein the subject is a human subject.

Claim 13. The use according to any one of claims 1-12, wherein the use also selectively induces Nrf2 in the subject.

Claim 14. The use according to any one of claims 1-13, wherein the use also inhibits activation of NF-κB in the subject.

Claim 15. The use according to any one of claims 1-13, wherein said AIM is a compound of the formula:



wherein:

W is an electron withdrawing group;

R_1 and R_2 are each independently:

hydrogen, hydroxy, $alkyl_{(C\leq 8)}$, substituted $alkyl_{(C\leq 8)}$, $alkenyl_{(C\leq 8)}$, substituted $alkenyl_{(C\leq 8)}$, $alkoxy_{(C\leq 8)}$ or substituted $alkoxy_{(C\leq 8)}$; or

R_1 and R_2 are taken together and are $alkanediyl_{(C\leq 18)}$, $alkenediyl_{(C\leq 18)}$, $arenediyl_{(C\leq 18)}$, $alkoxydiyl_{(C\leq 18)}$, $alkenyloxydiyl_{(C\leq 18)}$, $alkylaminodiyl_{(C\leq 18)}$, $alkenylaminodiyl_{(C\leq 18)}$, or $alkenylaminooxydiyl_{(C\leq 18)}$;

each R_3 is independently:

hydroxy, halo, oxo, amino, hydroxyamino, nitro, imino, cyano, azido, mercapto, or thio;

$alkyl_{(C\leq 12)}$, $alkenyl_{(C\leq 12)}$, $alkynyl_{(C\leq 12)}$, $aryl_{(C\leq 12)}$, $aralkyl_{(C\leq 12)}$, $heteroaryl_{(C\leq 12)}$, $heteroaralkyl_{(C\leq 12)}$, $acyl_{(C\leq 12)}$, $alkylidene_{(C\leq 12)}$, $alkoxy_{(C\leq 12)}$, $alkenyloxy_{(C\leq 12)}$, $alkynyloxy_{(C\leq 12)}$, $aryloxy_{(C\leq 12)}$, $aralkoxy_{(C\leq 12)}$, $heteroaryloxy_{(C\leq 12)}$, $heteroaralkoxy_{(C\leq 12)}$, $acyloxy_{(C\leq 12)}$, $alkylamino_{(C\leq 12)}$, $dialkylamino_{(C\leq 12)}$, $alkoxyamino_{(C\leq 12)}$, $alkenylamino_{(C\leq 12)}$, $alkynylamino_{(C\leq 12)}$, $arylamino_{(C\leq 12)}$, $aralkylamino_{(C\leq 12)}$, $heteroarylamino_{(C\leq 12)}$, $heteroaralkylamino_{(C\leq 12)}$, alkyl-

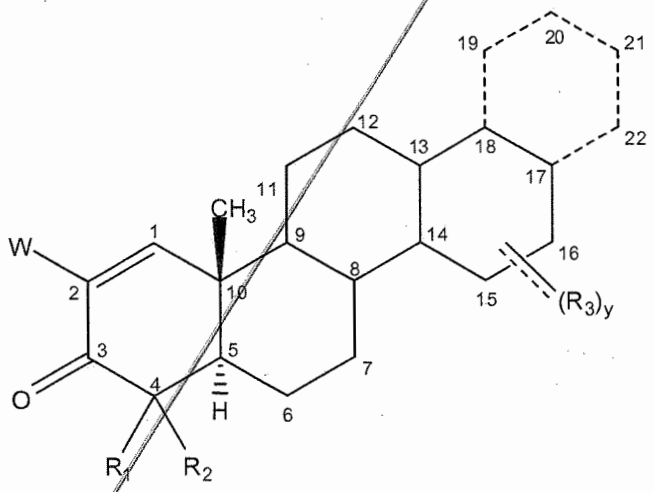
sulfonylamino$_{(C\leq12)}$, amido$_{(C\leq12)}$, alkylimino$_{(C\leq12)}$, alkenylimino$_{(C\leq12)}$, alkynylimino$_{(C\leq12)}$, arylimino$_{(C\leq12)}$, aralkylimino$_{(C\leq12)}$, heteroarylimino$_{(C\leq12)}$, heteroaralkylimino$_{(C\leq12)}$, acylimino$_{(C\leq12)}$ or a substituted version of any of these groups; or

any two R_3 in $(R_3)_y$ are taken together and are alkanediyl$_{(C\leq18)}$, alkenediyl$_{(C\leq18)}$, arenediyl$_{(C\leq18)}$, alkoxydiyl$_{(C\leq18)}$, alkenyloxydiyl$_{(C\leq18)}$, alkylaminodiyl$_{(C\leq18)}$, alkenylaminodiyl$_{(C\leq18)}$, or alkenylaminooxydiyl$_{(C\leq18)}$; and

y is from 0 to 8;

or a pharmaceutically-acceptable salt or tautomer of the formula.

Claim 16. The use according to any one of claims 1-13, wherein said AIM is a compound of the formula:



wherein:

W is an electron withdrawing group;

R_1 and R_2 are each independently:

hydrogen, hydroxy, alkyl$_{(C\leq8)}$, substituted alkyl$_{(C\leq8)}$, alkenyl$_{(C\leq8)}$, substituted alkenyl$_{(C\leq8)}$, alkoxy$_{(C\leq8)}$ or substituted alkoxy$_{(C\leq8)}$; or

R_1 and R_2 are taken together and are alkanediyl$_{(C\leq18)}$, alkenediyl$_{(C\leq18)}$, arenediyl$_{(C\leq18)}$, alkoxydiyl$_{(C\leq18)}$, alkenyloxydiyl$_{(C\leq18)}$, alky-

laminodiyl$_{(C\leq18)}$, alkenylaminodiyl$_{(C\leq18)}$, or alkenylamino-oxydiyl$_{(C\leq18)}$;

each R_3 is independently:

hydroxy, halo, oxo, amino, hydroxyamino, nitro, imino, cyano, azido, mercapto, or thio;

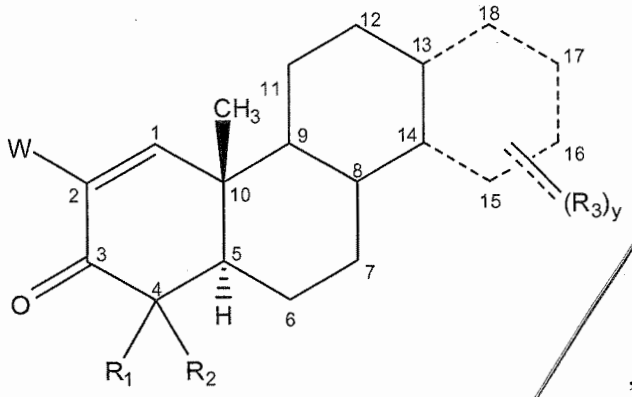
alkyl$_{(C\leq12)}$, alkenyl$_{(C\leq12)}$, alkynyl$_{(C\leq12)}$, aryl$_{(C\leq12)}$, aralkyl$_{(C\leq12)}$, heteroaryl$_{(C\leq12)}$, heteroaralkyl$_{(C\leq12)}$, acyl$_{(C\leq12)}$, alkylidene$_{(C\leq12)}$, alkoxy$_{(C\leq12)}$, alkenyloxy$_{(C\leq12)}$, alkynyloxy$_{(C\leq12)}$, aryloxy$_{(C\leq12)}$, aralkoxy$_{(C\leq12)}$, heteroaryloxy$_{(C\leq12)}$, heteroaralkoxy$_{(C\leq12)}$, acyl-oxy$_{(C\leq12)}$, alkylamino$_{(C\leq12)}$, dialkylamino$_{(C\leq12)}$, alkoxyamino$_{(C\leq12)}$, alkenylamino$_{(C\leq12)}$, alkynylamino$_{(C\leq12)}$, arylamino$_{(C\leq12)}$, aralkyl-amino$_{(C\leq12)}$, heteroarylamino$_{(C\leq12)}$, heteroaralkylamino$_{(C\leq12)}$, alkyl-sulfonylamino$_{(C\leq12)}$, amido$_{(C\leq12)}$, alkylimino$_{(C\leq12)}$, alkenyl-imino$_{(C\leq12)}$, alkynylimino$_{(C\leq12)}$, arylimino$_{(C\leq12)}$, aralkylimino$_{(C\leq12)}$, heteroarylimino$_{(C\leq12)}$, heteroaralkylimino$_{(C\leq12)}$, acylimino$_{(C\leq12)}$ or a substituted version of any of these groups; or

any two R_3 in $(R_3)_y$ are taken together and are alkanediyl$_{(C\leq18)}$, alkenediyl$_{(C\leq18)}$, arenediyl$_{(C\leq18)}$, alkoxydiyl$_{(C\leq18)}$, alkenyloxy-diyl$_{(C\leq18)}$, alkylaminodiyl$_{(C\leq18)}$, alkenylaminodiyl$_{(C\leq18)}$, or alkenyl-aminooxydiyl$_{(C\leq18)}$; and

y is from 0 to 8;

or a pharmaceutically-acceptable salt or tautomer of the formula.

Claim 17. The use according to any one of claims 1-13, wherein said AIM is a compound of the formula:



wherein:

W is an electron withdrawing group;

R_1 and R_2 are each independently:

hydrogen, hydroxy, $alkyl_{(C\leq 8)}$, substituted $alkyl_{(C\leq 8)}$, $alkenyl_{(C\leq 8)}$, substituted $alkenyl_{(C\leq 8)}$, $alkoxy_{(C\leq 8)}$ or substituted $alkoxy_{(C\leq 8)}$; or

R_1 and R_2 are taken together and are $alkanediyl_{(C\leq 18)}$, $alkenediyl_{(C\leq 18)}$, $arenediyl_{(C\leq 18)}$, $alkoxydiyl_{(C\leq 18)}$, $alkenyloxydiyl_{(C\leq 18)}$, $alkylaminodiyl_{(C\leq 18)}$, $alkenylaminodiyl_{(C\leq 18)}$, or $alkenylaminooxydiyl_{(C\leq 18)}$;

each R_3 is independently:

hydroxy, halo, oxo, amino, hydroxyamino, nitro, imino, cyano, azido, mercapto, or thio;

$alkyl_{(C\leq 12)}$, $alkenyl_{(C\leq 12)}$, $alkynyl_{(C\leq 12)}$, $aryl_{(C\leq 12)}$, $aralkyl_{(C\leq 12)}$, $heteroaryl_{(C\leq 12)}$, $heteroaralkyl_{(C\leq 12)}$, $acyl_{(C\leq 12)}$, $alkylidene_{(C\leq 12)}$, $alkoxy_{(C\leq 12)}$, $alkenyloxy_{(C\leq 12)}$, $alkynyloxy_{(C\leq 12)}$, $aryloxy_{(C\leq 12)}$, $aralkoxy_{(C\leq 12)}$, $heteroaryloxy_{(C\leq 12)}$, $heteroaralkoxy_{(C\leq 12)}$, $acyloxy_{(C\leq 12)}$, $alkylamino_{(C\leq 12)}$, $dialkylamino_{(C\leq 12)}$, $alkoxyamino_{(C\leq 12)}$, $alkenylamino_{(C\leq 12)}$, $alkynylamino_{(C\leq 12)}$, $arylamino_{(C\leq 12)}$, $aralkylamino_{(C\leq 12)}$, $heteroarylamino_{(C\leq 12)}$, $heteroaralkylamino_{(C\leq 12)}$, $alkylsulfonylamino_{(C\leq 12)}$, $amido_{(C\leq 12)}$, $alkylimino_{(C\leq 12)}$, $alkenyl-$

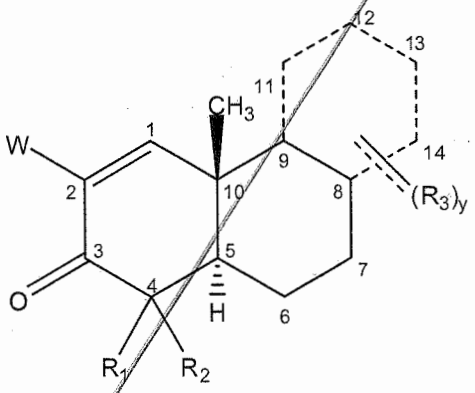
imino$_{(C\leq12)}$, alkynylimino$_{(C\leq12)}$, arylimino$_{(C\leq12)}$, aralkylimino$_{(C\leq12)}$, heteroarylimino$_{(C\leq12)}$, heteroaralkylimino$_{(C\leq12)}$, acylimino$_{(C\leq12)}$ or a substituted version of any of these groups; or

any two R_3 in $(R_3)_y$ are taken together and are alkanediyl$_{(C\leq18)}$, alkenediyl$_{(C\leq18)}$, arenediyl$_{(C\leq18)}$, alkoxydiyl$_{(C\leq18)}$, alkenyloxydiyl$_{(C\leq18)}$, alkylaminodiyl$_{(C\leq18)}$, alkenylaminodiyl$_{(C\leq18)}$, or alkenylaminooxydiyl$_{(C\leq18)}$; and

y is from 0 to 7;

or a pharmaceutically-acceptable salt or tautomer of the formula.

Claim 18. The use according to any one of claims 1-13, wherein said AIM is a compound of the formula:



,

wherein:

W is an electron withdrawing group;

R_1 and R_2 are each independently:

hydrogen, hydroxy, alkyl$_{(C\leq8)}$, substituted alkyl$_{(C\leq8)}$, alkenyl$_{(C\leq8)}$, substituted alkenyl$_{(C\leq8)}$, alkoxy$_{(C\leq8)}$ or substituted alkoxy$_{(C\leq8)}$; or

R_1 and R_2 are taken together and are alkanediyl$_{(C\leq18)}$, alkenediyl$_{(C\leq18)}$, arenediyl$_{(C\leq18)}$, alkoxydiyl$_{(C\leq18)}$, alkenyloxydiyl$_{(C\leq18)}$, alkylaminodiyl$_{(C\leq18)}$, alkenylaminodiyl$_{(C\leq18)}$, or alkenylaminooxydiyl$_{(C\leq18)}$;

each R_3 is independently:

hydroxy, halo, oxo, amino, hydroxyamino, nitro, imino, cyano, azido, mercapto, or thio;

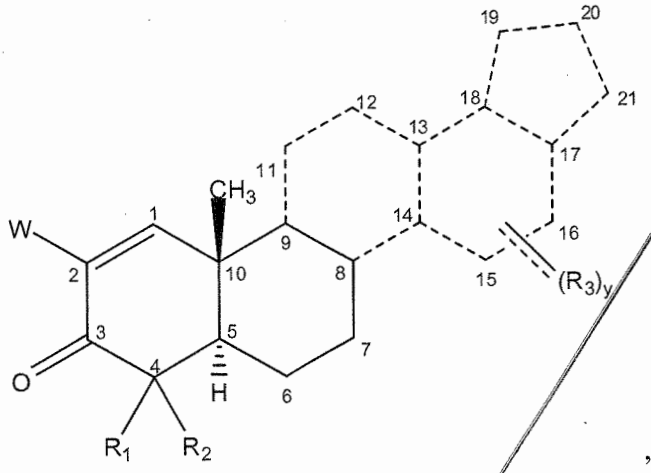
$alkyl_{(C\leq12)}$, $alkenyl_{(C\leq12)}$, $alkynyl_{(C\leq12)}$, $aryl_{(C\leq12)}$, $aralkyl_{(C\leq12)}$, $heteroaryl_{(C\leq12)}$, $heteroaralkyl_{(C\leq12)}$, $acyl_{(C\leq12)}$, $alkylidene_{(C\leq12)}$, $alkoxy_{(C\leq12)}$, $alkenyloxy_{(C\leq12)}$, $alkynyloxy_{(C\leq12)}$, $aryloxy_{(C\leq12)}$, $aralkoxy_{(C\leq12)}$, $heteroaryloxy_{(C\leq12)}$, $heteroaralkoxy_{(C\leq12)}$, $acyloxy_{(C\leq12)}$, $alkylamino_{(C\leq12)}$, $dialkylamino_{(C\leq12)}$, $alkoxyamino_{(C\leq12)}$, $alkenylamino_{(C\leq12)}$, $alkynylamino_{(C\leq12)}$, $arylamino_{(C\leq12)}$, $aralkylamino_{(C\leq12)}$, $heteroarylamino_{(C\leq12)}$, $heteroaralkylamino_{(C\leq12)}$, $alkylsulfonylamino_{(C\leq12)}$, $amido_{(C\leq12)}$, $alkylimino_{(C\leq12)}$, $alkenylimino_{(C\leq12)}$, $alkynylimino_{(C\leq12)}$, $arylimino_{(C\leq12)}$, $aralkylimino_{(C\leq12)}$, $heteroarylimino_{(C\leq12)}$, $heteroaralkylimino_{(C\leq12)}$, $acylimino_{(C\leq12)}$ or a substituted version of any of these groups; or

any two R_3 in $(R_3)_y$ are taken together and are $alkanediyl_{(C\leq18)}$, $alkenediyl_{(C\leq18)}$, $arenediyl_{(C\leq18)}$, $alkoxydiyl_{(C\leq18)}$, $alkenyloxydiyl_{(C\leq18)}$, $alkylaminodiyl_{(C\leq18)}$, $alkenylaminodiyl_{(C\leq18)}$, or $alkenylaminooxydiyl_{(C\leq18)}$; and

y is from 0 to 6;

or a pharmaceutically-acceptable salt or tautomer of the formula.

Claim 19. The use according to any one of claims 1-13, wherein said AIM is a compound of the formula:



,

wherein:

W is an electron withdrawing group;

R_1 and R_2 are each independently:

hydrogen, hydroxy, $alkyl_{(C\leq8)}$, substituted $alkyl_{(C\leq8)}$, $alkenyl_{(C\leq8)}$, substituted $alkenyl_{(C\leq8)}$, $alkoxy_{(C\leq8)}$ or substituted $alkoxy_{(C\leq8)}$; or

R_1 and R_2 are taken together and are $alkanediyl_{(C\leq18)}$, $alkenediyl_{(C\leq18)}$, $arenediyl_{(C\leq18)}$, $alkoxydiyl_{(C\leq18)}$, $alkenyloxydiyl_{(C\leq18)}$, $alkylaminodiyl_{(C\leq18)}$, $alkenylaminodiyl_{(C\leq18)}$, or $alkenylaminooxydiyl_{(C\leq18)}$;

each R_3 is independently:

hydroxy, halo, oxo, amino, hydroxyamino, nitro, imino, cyano, azido, mercapto, or thio;

$alkyl_{(C\leq12)}$, $alkenyl_{(C\leq12)}$, $alkynyl_{(C\leq12)}$, $aryl_{(C\leq12)}$, $aralkyl_{(C\leq12)}$, $heteroaryl_{(C\leq12)}$, $heteroaralkyl_{(C\leq12)}$, $acyl_{(C\leq12)}$, $alkylidene_{(C\leq12)}$, $alkoxy_{(C\leq12)}$, $alkenyloxy_{(C\leq12)}$, $alkynyloxy_{(C\leq12)}$, $aryloxy_{(C\leq12)}$, $aralkoxy_{(C\leq12)}$, $heteroaryloxy_{(C\leq12)}$, $heteroaralkoxy_{(C\leq12)}$, $acyloxy_{(C\leq12)}$, $alkylamino_{(C\leq12)}$, $dialkylamino_{(C\leq12)}$, $alkoxyamino_{(C\leq12)}$, $alkenylamino_{(C\leq12)}$, $alkynylamino_{(C\leq12)}$, $arylamino_{(C\leq12)}$, $aralkylamino_{(C\leq12)}$, $heteroarylamino_{(C\leq12)}$, $heteroaralkylamino_{(C\leq12)}$, alkyl-

sulfonylamino$_{(C\leq12)}$, amido$_{(C\leq12)}$, alkylimino$_{(C\leq12)}$, alkenylimino$_{(C\leq12)}$, alkynylimino$_{(C\leq12)}$, arylimino$_{(C\leq12)}$, aralkylimino$_{(C\leq12)}$, heteroarylimino$_{(C\leq12)}$, heteroaralkylimino$_{(C\leq12)}$, acylimino$_{(C\leq12)}$ or a substituted version of any of these groups; or

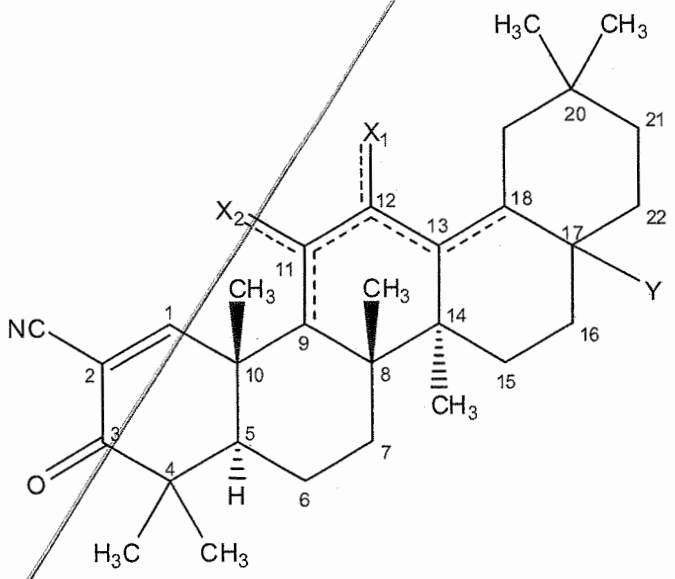
any two R_3 in $(R_3)_y$ are taken together and are alkanediyl$_{(C\leq18)}$, alkenediyl$_{(C\leq18)}$, arenediyl$_{(C\leq18)}$, alkoxydiyl$_{(C\leq18)}$, alkenyloxydiyl$_{(C\leq18)}$, alkylaminodiyl$_{(C\leq18)}$, alkenylaminodiyl$_{(C\leq18)}$, or alkenylaminooxydiyl$_{(C\leq18)}$; and

y is from 0 to 8;

or a pharmaceutically-acceptable salt or tautomer of the formula.

Claim 20. The use of any one of claims 15 to 19, wherein W is cyano, fluoro or $-CF_3$.

Claim 21. The use of claim 15, wherein said AIM is a compound of the formula:



wherein:

X_1 and X_2 are independently:

hydrogen, hydroxy, halo, oxo, amino, hydroxyamino, nitro, imino, cyano, azido, mercapto, or thio; or

alkyl$_{(C\leq12)}$, alkenyl$_{(C\leq12)}$, alkynyl$_{(C\leq12)}$, aryl$_{(C\leq12)}$, aralkyl$_{(C\leq12)}$, heteroaryl$_{(C\leq12)}$, heteroaralkyl$_{(C\leq12)}$, acyl$_{(C\leq12)}$, alkylidene$_{(C\leq12)}$,

alkoxy$_{(C\leq12)}$, alkenyloxy$_{(C\leq12)}$, alkynyloxy$_{(C\leq12)}$, aryloxy$_{(C\leq12)}$, aralkoxy$_{(C\leq12)}$, heteroaryloxy$_{(C\leq12)}$, heteroaralkoxy$_{(C\leq12)}$, acyloxy$_{(C\leq12)}$, alkylamino$_{(C\leq12)}$, dialkylamino$_{(C\leq12)}$, alkoxyamino$_{(C\leq12)}$, alkenylamino$_{(C\leq12)}$, alkynylamino$_{(C\leq12)}$, arylamino$_{(C\leq12)}$, aralkylamino$_{(C\leq12)}$, heteroarylamino$_{(C\leq12)}$, heteroaralkylamino$_{(C\leq12)}$, alkylsulfonylamino$_{(C\leq12)}$, amido$_{(C\leq12)}$, alkylimino$_{(C\leq12)}$, alkenylimino$_{(C\leq12)}$, alkynylimino$_{(C\leq12)}$, arylimino$_{(C\leq12)}$, aralkylimino$_{(C\leq12)}$, heteroarylimino$_{(C\leq12)}$, heteroaralkylimino$_{(C\leq12)}$, acylimino$_{(C\leq12)}$ or a substituted version of any of these groups;

Y is hydrogen, hydroxy, halo, amino, hydroxyamino, nitro, cyano, azido, mercapto, alkyl$_{(C\leq12)}$, alkenyl$_{(C\leq12)}$, alkynyl$_{(C\leq12)}$, aryl$_{(C\leq12)}$, aralkyl$_{(C\leq12)}$, heteroaryl$_{(C\leq12)}$, heteroaralkyl$_{(C\leq12)}$, acyl$_{(C\leq12)}$, alkoxy$_{(C\leq12)}$, alkenyloxy$_{(C\leq12)}$, alkynyloxy$_{(C\leq12)}$, aryloxy$_{(C\leq12)}$, aralkoxy$_{(C\leq12)}$, heteroaryloxy$_{(C\leq12)}$, heteroaralkoxy$_{(C\leq12)}$, acyloxy$_{(C\leq12)}$, alkylamino$_{(C\leq12)}$, dialkylamino$_{(C\leq12)}$, alkoxyamino$_{(C\leq12)}$, alkenylamino$_{(C\leq12)}$, alkynylamino$_{(C\leq12)}$, arylamino$_{(C\leq12)}$, aralkylamino$_{(C\leq12)}$, heteroarylamino$_{(C\leq12)}$, heteroaralkylamino$_{(C\leq12)}$ or alkylsulfonylamino$_{(C\leq12)}$; and

or a pharmaceutically-acceptable salt or tautomer of the formula.

Claim 22. The use of claim 21, wherein said AIM is bardoxolone methyl.

Claim 23. The use of claim 22, wherein at least a portion of the bardoxolone methyl is present as a crystalline form having an X-ray diffraction pattern (CuKα) comprising significant diffraction peaks at about 8.8, 12.9, 13.4, 14.2 and 17.4 °2θ.

Claim 24. The use of claim 23, wherein the X-ray diffraction pattern (CuKα) is substantially as shown in FIG. 1A or FIG. 1B.

Claim 25. The use of claim 22, wherein at least a portion of the bardoxolone methyl is present as an amorphous form having an X-ray diffraction pattern (CuKα) with a halo peak at approximately 13.5 °2θ, substantially as shown in FIG. 1C, and a T_g.

Claim 26. The use of claim 25, wherein the T_g value is in the range of about 120 °C to about 135 °C.

Claim 27. The use of claim 26, wherein the T_g value is in the range of about 125 °C to about 130 °C.

Claim 28. The use according to any one of claims 1-27, wherein the sufficient amount of to reduce the subject's weight is a daily dose from about 0.1 mg to about 30 mg of the AIM.

Claim 29. The use according to any one of claims 1-27, where the AIM is administered orally, intraarterially or intravenously.

Claim 30. The use according to any one of claims 1-27, where the AIM is formulated as a hard or soft capsule or a tablet.

Claim 31. The use according to any one of claims 1-27, wherein the AIM is formulated as a solid dispersion comprising (i) the compound and (ii) an excipient.

Claim 32. The use of claim 31, wherein the excipient is a methacrylic acid – ethyl acrylate copolymer (1:1).

Claim 33. The use according to any one of claims 1-32, where the weight of the subject has been measured or will be measured.

Claim 34. The use of claim 33, where the weight of the subject has been measured prior to administering the AIM and will be measured after administering the AIM.

Claim 35. The use according to any one of claims 1-32, where the BMI of the subject has been measured or will be measured.

Claim 36. The use of claim 35, where the BMI of the subject has been measured prior to administering the AIM and will be measured after administering the AIM.

Claim 37. The use according to any one of claims 1-36, wherein the subject also suffers from renal disease, cardiovascular disease, diabetes, autoimmune disease, respiratory

disease, neurodegenerative disease, liver disease, infectious disease, cancer or has or will undergo transplant.

Claim 38. The use according to any one of claims 1-36, wherein the subject does not also suffer from renal disease, cardiovascular disease, diabetes, autoimmune disease, respiratory disease, neurodegenerative disease, liver disease, infectious disease, or cancer.

Claim 39. The use according to any one of claims 1-36, where the subject has diabetes.

Claim 40. The use according to any one of claims 1-36, where the subject does not have diabetes.

Claim 41. The use according to any one of claims 1-36, where the subject exhibits one or more symptoms of diabetes.

Claim 42. The use according to any one of claims 1-36, where the subject does not exhibit any symptoms of diabetes.

Claim 43. The use according to any one of claims 1-36, where the subject has been identified as having diabetes.

Claim 44. The use according to any one of claims 1-36, where the subject has been identified as not having diabetes.

Claim 45. The use according to any one of claims 1-36, where the level of a marker of diabetes in the subject has been measured or will be measured.

Claim 46. The use according to any one of claims 1-36, wherein the subject has elevated levels of at least one biomarker associated with diabetes, cardiovascular disease, renal disease, fatty liver disease or metabolic syndrome.

Claim 47. The use according to any one of claims 1-36, wherein the subject does not have elevated levels of at least one biomarker associated with diabetes, cardiovascular disease, renal disease, fatty liver disease or metabolic syndrome.

Claim 48. The use according to any one of claims 1-36, wherein the subject does not have elevated levels of any biomarker associated with diabetes, cardiovascular disease, renal disease, fatty liver disease or metabolic syndrome.

Claim 49. The use according to claims 46 or 47, wherein the biomarker is a marker of insulin resistance, leptin resistance, adiponectin resistance, cardiovascular stress, or renal dysfunction.

Claim 50. The use of claim 49, wherein the biomarker is a marker of insulin resistance.

Claim 51. The use of claim 50, wherein the biomarker is fasting glucose or hemoglobin A1c.

Claim 52. The use of claim 49, wherein the biomarker is a marker of leptin resistance.

Claim 53. The use of claim 49, wherein the biomarker is a marker of adiponectin resistance.

Claim 54. The use of claim 53, wherein the biomarker is adiponectin.

Claim 55. The use of claim 49, wherein the biomarker is a marker of cardiovascular stress.

Claim 56. The use of claim 55, wherein the biomarker is circulating endothelial cells or C-reactive protein.

Claim 57. The use of claim 55, wherein the biomarker is circulating endothelial cells.

Claim 58. The use of claim 57, wherein the biomarker is iNOS-positive circulating endothelial cells.

Claim 59. The use of claim 49, wherein the biomarker is a marker of renal disease.

Claim 60. The use of claim 59, wherein the biomarker is serum creatinine.

Claim 61. The use of claim 59, wherein the biomarker is cystatin C.

Claim 62. The use of claim 59, wherein the biomarker is uric acid.

Claim 63. The use according to any one of claims 1-36, where the subject has chronic kidney disease (CKD) or exhibits one or more symptoms of CKD.

Claim 64. The use according to any one of claims 1-36, where the subject does not have chronic kidney disease (CKD)

Claim 65. The use according to any one of claims 1-36, where the subject does not exhibit any symptoms of CKD.

Claim 66. The use according to any one of claims 1-36, where the subject has been identified as having CKD.

Claim 67. The use according to any one of claims 1-36, where the subject has been identified as not having CKD.

Claim 68. The use according to any one of claims 1-36, where the level of a marker of CKD in the subject has been measured or will be measured.

Claim 69. The use according to any one of claims 63-67, where the CKD is characterized by a serum creatinine level of 1.3-3.0 mg/DL where the subject is a human female or a serum creatinine level of 1.5-3.0 mg/DL where the subject is a human male.

Claim 70. The use of claim 63, where the CKD is stage 4.

Claim 71. The use according to any one of claims 1-36, where the subject does not have stage 4 chronic kidney disease (CKD).

Claim 72. The use according to any one of claims 1-36, where the subject has diabetic nephropathy (DN) or exhibits one or more symptoms of DN.

Claim 73. The use according to any one of claims 1-36, where the subject does not have diabetic nephropathy (DN)

Claim 74. The use according to any one of claims 1-36, where the subject does not exhibit any symptoms of DN.

Claim 75. The use of claim 72, where the subject has been identified as having DN.

Claim 76. The use of claim 72, where the subject has been identified as not having DN.

Claim 77. The use according to any one of claims 1-36, where the level of a marker of DN in the subject has been measured or will be measured.

Claim 78. The use according to any one of claims 1-36, where the administering results in an improvement in estimated glomerular filtration rate (eGFR) of the subject.

Claim 79. The use of claim 78, where the administering reduces the level of serum creatinine in the subject.

Claim 80. The use of claim 79, where the level of serum creatinine in the blood of the subject has been measured or will be measured.

Claim 81. The use according to any one of claims 1-36, where the level of blood urea nitrogen (BUN) in the subject has been measured or will be measured.

Claim 82. The use according to any one of claims 1-36, where the level of Adiponectin in the blood of the subject has been measured or will be measured.

Claim 83. The use according to any one of claims 1-36, where the level of Angiotensin II in the subject has been measured or will be measured.

Claim 84. The use according to any one of claims 1-36, where the subject has insulin resistance or exhibits one or more symptoms of insulin resistance.

Claim 85. The use according to any one of claims 1-36, where the subject does not have insulin resistance.

Claim 86. The use according to any one of claims 1-36, where the subject does not exhibit any symptoms of insulin resistance.

Claim 87. The use of claim 84, where the subject has been identified as having insulin resistance.

Claim 88. The use of claim 85, where the subject has been identified as not having insulin resistance.

Claim 89. The use according to any one of claims 1-36, where the level of a marker of insulin resistance in the subject has been measured or will be measured.

Claim 90. The use of claim 84, where the level of hemoglobin A1c in the subject has been measured or will be measured.

Claim 91. The use of claim 84, where a blood sugar level of the subject has been measured or will be measured.

Claim 92. The use of claim 84, where the administering reduces the level of hemoglobin A1c or fasting blood glucose in the subject.

Claim 93. The use of claim 91, where a fasting glucose level of the subject has been measured or will be measured.

Claim 94. The use of claim 84, where the insulin sensitivity of the subject has been measured or will be measured by a hyperinsulinemic euglycemic clamp test.

Claim 95. The use of claim 84, where a glucose disposal rate (GDR) in the subject has been measured or will be measured.

Claim 96. The use according to any one of claims 1-36, where the subject has glucose intolerance or exhibits one or more symptoms of glucose intolerance.

Claim 97. The use according to any one of claims 1-36, where the subject does not have glucose intolerance.

Claim 98. The use according to any one of claims 1-36, where the subject does not exhibit any symptoms of glucose intolerance.

Claim 99. The use of claim 96, where the subject has been identified as having glucose intolerance.

Claim 100. The use of claim 97, where the subject has been identified as not having glucose intolerance.

Claim 101. The use according to any one of claims 1-36, where the level of a marker of glucose intolerance in the subject has been measured or will be measured.

Claim 102. The use of claim 96, where the level of hemoglobin A1c in the subject has been measured or will be measured.

Claim 103. The use of claim 96, where a blood sugar level of the subject has been measured or will be measured.

Claim 104. The use of claim 96, where the administering reduces the level of hemoglobin A1c or fasting blood glucose in the subject.

Claim 105. The use of claim 103, where a fasting glucose level of the subject has been measured or will be measured.

Claim 106. The use of claim 96, where the insulin sensitivity of the subject has been measured or will be measured by a hyperinsulinemic euglycemic clamp test.

Claim 107. The use of claim 96, where a glucose disposal rate (GDR) in the subject has been measured or will be measured.

Claim 108. The use according to any one of claims 1-36, where the subject has cardiovascular disease (CVD) or exhibits one or more symptoms of CVD.

Claim 109. The use according to any one of claims 1-36, where the subject does not have cardiovascular disease (CVD) or does not exhibit any symptoms of CVD.

Claim 110. The use according to any one of claims 1-36, where the subject does not exhibit any symptoms of CVD.

Claim 111. The use according to any one of claims 1-36, where the subject has been identified as having CVD.

Claim 112. The use according to any one of claims 1-36, where the subject has been identified as not having CVD.

Claim 113. The use according to any one of claims 1-36, where the level of a marker of CVD in the subject has been measured or will be measured.

Claim 114. The use according to any one of claims 1-36, where the number of circulating endothelial cells (CECs) in the blood of the subject has been measured or will be measured.

Claim 115. The use of claim 114, where the CECs are iNOS-positive circulating endothelial cells.

Claim 116. The use of claim 108, where the administering also reduces the level of circulating endothelial cells in the subject.

Claim 117. The use of claim 116, where the administering also reduces the level of hemoglobin A1c or fasting blood glucose in the subject.

Claim 118. The use according to any one of claims 1-36, where the subject has fatty liver disease (FLD) or exhibits one or more symptoms of FLD.

Claim 119. The use according to any one of claims 1-36, where the subject does not have fatty liver disease (FLD) or does not exhibit any symptoms of FLD.

Claim 120. The use according to any one of claims 1-36, where the subject does not exhibit any symptoms of FLD.

Claim 121. The use according to any one of claims 1-36, where the subject has been identified as having FLD.

Claim 122. The use according to any one of claims 1-36, where the subject has been identified as not having FLD.

Claim 123. The use according to any one of claims 1-36, where the level of a marker of FLD in the subject has been measured or will be measured.

Claim 124. The use according to any one of claims 1-36, where the subject has been identified as having cancer.

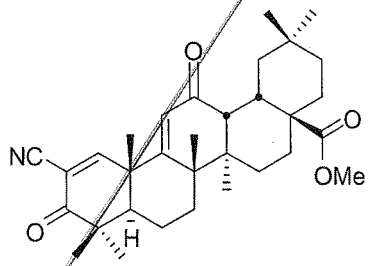
Claim 125. The use according to any one of claims 1-36, where the subject has been identified as not having cancer.

Claim 126. The use according to any one of claims 1-36, where the subject has been identified as having cancer and diabetes.

Claim 127. The use according to any one of claims 1-36, where the subject has been identified as not having cancer and diabetes.

Claim 128. The use according to any one of claims 1-36, where if the sufficient amount were administered to a non-obese subject, the non-obese subject's weight would not be reduced significantly.

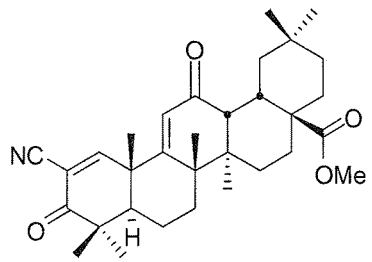
Claim 129. Use of a compound of the formula,



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in the manufacture of a medicament for reducing a subject's weight, where the subject has been identified as (i) being overweight or obese; and (ii) not having diabetes.

Claim 130. Use of a compound of the formula,



,

in the manufacture of a medicament for reducing a subject's weight, wherein:

(a) at least a portion of the compound is present as an amorphous form having an X-ray diffraction pattern (CuKα) with a halo peak at approximately 13.5 °2θ, substantially as shown in FIG. 1C, and a T_g from about 120 °C to about 135 °C; and

(b) where the subject has been identified as

(i) being overweight or obese; and

(ii) not having diabetes.

Claim 131. The use of claim 130, wherein the subject is a human and the amount is a daily dose from 5 mg to 50 mg.

Claim 132. The use of claim 131, wherein the daily dose is about 10 mg.

Claim 133. The use of claim 131, wherein the daily dose is about 20 mg.

Claim 134. The use of claim 131, wherein the daily dose is about 40 mg.