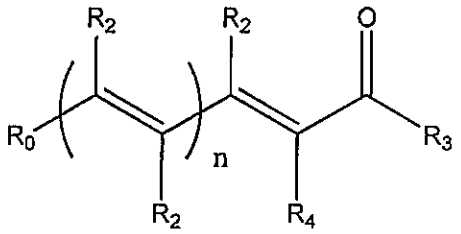
CLAIMS

1. A compound of structural Formula I:



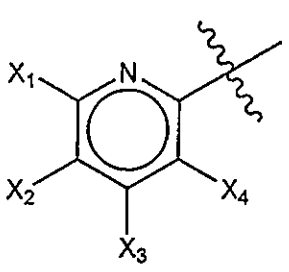
or a pharmaceutically acceptable salt thereof, wherein:

n is an integer selected from 1, 2, or 3;

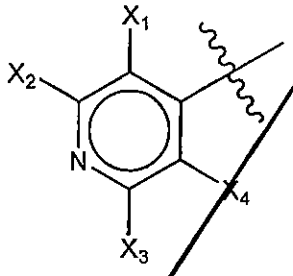
R_0 is R_1, or R_1–Z_1–;

Z_1 is alkyl;

R_1 is:



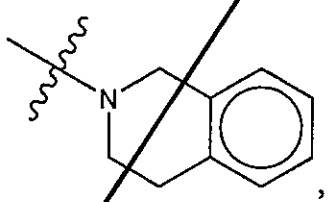
or



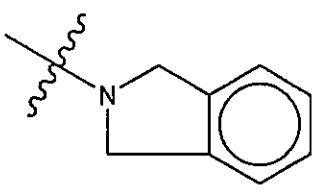
X_1, X_2, X_3, and X_4 are each independently hydrogen, halogen, alkyl, alkoxy, OH, trihalomethyl, or NO_2;

R_2 is alkyl, alkenyl, alkynyl, alkoxy, alkylaryl, halogen, hydrogen, OH, NO_2, thioether, amine, SH, or NH_2;

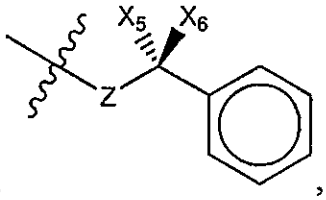
R_3 is:



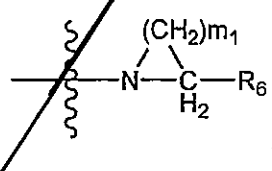
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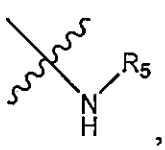
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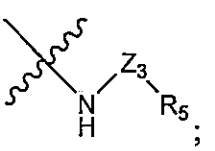


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or



;

m_1 is an integer selected from 1, 2, 3, or 4;

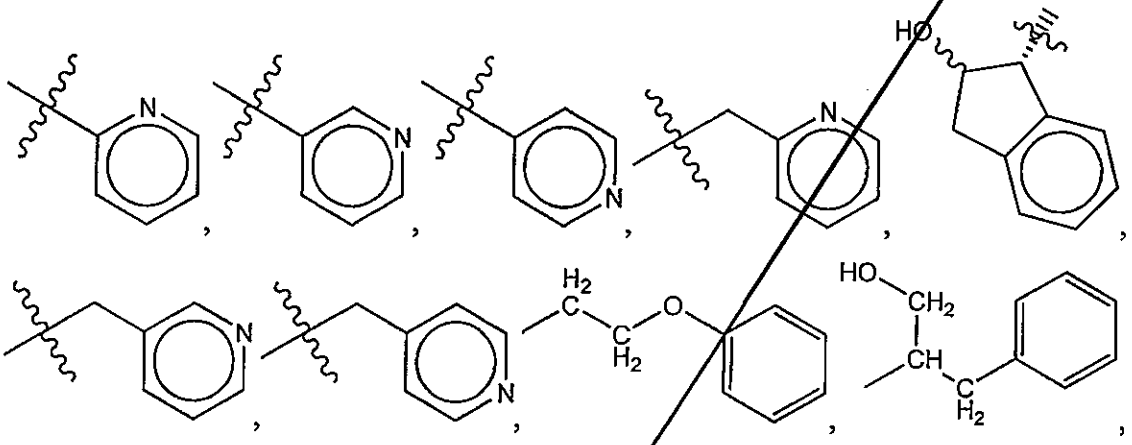
X_5 and X_6 are each independently hydrogen, alkyl, aryl, alkoxyl, aryloxy, cycloalkyl, aralkyl, alkylester, alkylesteralkyl, alkylacetoxyl, hydroxyl, or hydroxylalkyl;

Z is NH, S, or O;

Z_3 is alkyl;

R_4 is CN, substituted amine, CH_2S–alkyl, alkyl, or CH_2N_3;

R_5 and R_6 are each independently selected from the group consisting of:



monosaccharide, polysaccharide, monosaccharide derivative, substituted aryl, unsubstituted aryl, substituted aryl, and unsubstituted alkylaryl.

2. Use of a compound as recited in claim 1, in the manufacture of a medicament for inhibiting STAT3 activation.

3. Use of a compound as recited in claim 1, in the manufacture of a medicament for the treatment of a STAT3-mediated disease.

4. Use of a compound as recited in claim 1, in the manufacture of a medicament for inhibiting STAT5 activation.

5. Use of a compound as recited in claim 1, in the manufacture of a medicament for the treatment of a STAT5-mediated disease.

6. The compound as recited in claim 1, wherein:

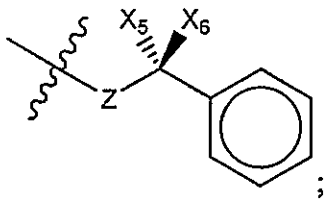
n is 1;

R_0 is R_1;

X_1, X_2, X_3, and X_4 are each independently hydrogen, halogen, alkyl, alkoxy, OH, trihalomethyl, or NO_2;

R_2 is hydrogen;

R_3 is:



;

X_5 and X_6 are each independently hydrogen, alkyl, cycloalkyl, aralkyl, alkylester, alkylesteralkyl, alkylacetoxyl, or hydroxylalkyl;

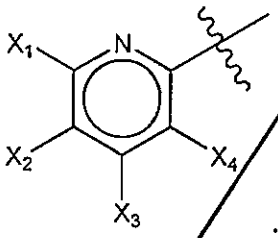
Z is NH; and

R_4 is CN.

7. The compound as recited in claim 6, wherein at least one of X_5 and X_6 is selected from the group consisting of alkyl, cycloalkyl, aralkyl, alkylester, alkylesteralkyl, alkylacetoxyl, or hydroxylalkyl.

8. The compound as recited in claim 6, wherein at least one of X_1, X_2, X_3, and X_4 is halogen.

9. The compound as recited in claim 7, wherein R_1 is:



.

10. The compound as recited in claim 9, wherein:

X_1 is halogen;

X_2, X_3, and X_4 are each independently hydrogen, halogen, alkyl, alkoxy, OH, trihalomethyl, or NO_2; and

X_5 and X_6 are each independently hydrogen, cyclopropyl, or $-CH_3$.

11. The compound as recited in claim 9, wherein:

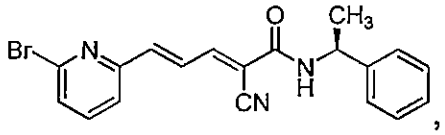
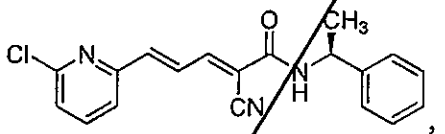
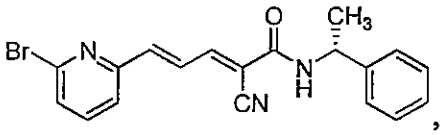
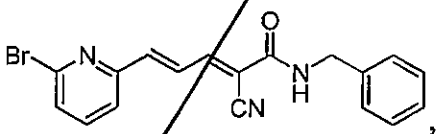
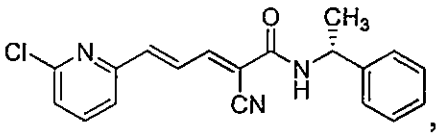
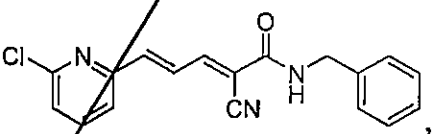
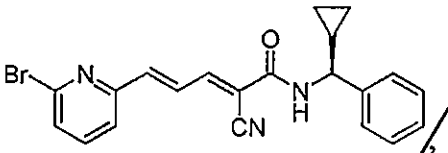
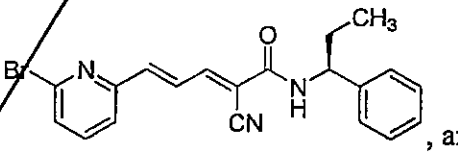
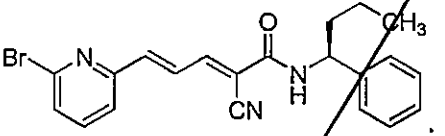
X_1 is Br or Cl; and

X_2, X_3, and X_4 are each hydrogen.

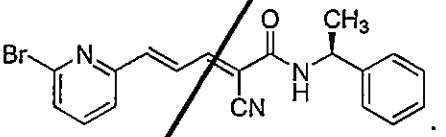
12. The compound as recited in claim 11, wherein:

X_5 and X_6 are each independently hydrogen, cyclopropyl, or $-CH_3$.

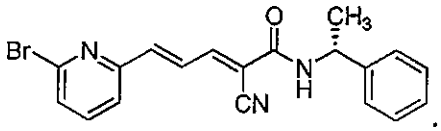
13. A compound as recited in claim 1, selected from the group consisting of:


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,

,

, and

.

14. A compound as recited in claim 1, having the structural formula:


.

15. A compound as recited in claim 1, having the structural formula:



16. Use of a compound as recited in claim 6 for the treatment of a disease selected from the group consisting of cancer, proliferative angiogenic conditions, proliferative skin disorders, central nervous system diseases, inflammatory disorders, and auto-immune diseases.

17. The use as recited in claim 16, wherein said cancer is selected from the group consisting of leukemia, HTLV-1-dependent leukemia, erythroleukaemia, acute myelogenous leukemia, chronic myelogenous leukemia, large granular lymphocyte leukemia, lymphoma , Burkitt's lymphoma, mycosis fungoides, cutaneous T-cell lymphoma, non-Hodgkins lymphoma, anaplastic large-cell lymphoma, breast cancer, head and neck cancer, melanoma, ovarian cancer, lung cancer, pancreatic cancer, prostate cancer, bladder cancer, high grade gliomas, brain metastasis, skin cancer, colon cancer, myelodysplastic syndrome, and multiple myeloma.

18. The use as recited in claim 17, wherein said cancer is cutaneous T-cell lymphoma.

19. The use as recited in claim 16, wherein said proliferative angiogenic condition is selected from the group consisting of telangectasia, venous angiomas, hemangioblastoma, and polycythemia vera.

20. The use as recited in claim 16, wherein said proliferative skin disorder is selected from the group consisting of topical dermatitis, psoriasis, and rosacea.

21. The use as recited in claim 16, wherein said proliferative skin disorder is psoriasis.

22. The use as recited in claim 16, wherein said central nervous system disease is selected from the group consisting of multiple sclerosis and progressive multifocal leukoencephalopathy.

23. The use as recited in claim 16, wherein said inflammatory disorder is selected from the group consisting of osteoarthritis, rheumatoid arthritis, Crohn's disease, and ulcerative colitis.

24. The use as recited in claim 16, wherein said auto-immune disease is lupus.

25. Use of a compound as recited in claim 14 for the treatment of a disease selected from the group consisting of cancer, proliferative angiogenic conditions, proliferative skin disorders, central nervous system diseases, inflammatory disorders, and auto-immune diseases.

26. The use as recited in claim 25, wherein said cancer is selected from the group consisting of leukemia, HTLV-1-dependent leukemia, erythroleukaemia, acute myelogenous leukemia, chronic myelogenous leukemia, large granular lymphocyte leukemia, lymphoma , Burkitt's lymphoma, mycosis fungoides, cutaneous T-cell lymphoma, non-Hodgkins lymphoma, anaplastic large-cell lymphoma, breast cancer, head and neck cancer, melanoma, ovarian cancer, lung cancer, pancreatic cancer, prostate cancer, bladder cancer, high grade gliomas, brain metastasis, skin cancer, colon cancer, myelodysplastic syndrome, and multiple myeloma.

27. The use as recited in claim 26, wherein said cancer is cutaneous T-cell lymphoma.

28. The use as recited in claim 25, wherein said proliferative angiogenic condition is selected from the group consisting of telangectasia, venous angiomas, hemangioblastoma, and polycythemia vera.

29. The use as recited in claim 25, wherein said proliferative skin disorder is selected from the group consisting of topical dermatitis, psoriasis, and rosacea.

30. The use as recited in claim 25, wherein said proliferative skin disorder is psoriasis.

31. The use as recited in claim 25, wherein said central nervous system disease is selected from the group consisting of multiple sclerosis and progressive multifocal leukoencephalopathy.

32. The use as recited in claim 25, wherein said inflammatory disorder is selected from the group consisting of osteoarthritis, rheumatoid arthritis, Crohn's disease, and ulcerative colitis.

33. The use as recited in claim 25, wherein said auto-immune disease is lupus.

34. A pharmaceutical composition comprising a compound as recited in claim 6, together with a pharmaceutically acceptable carrier.

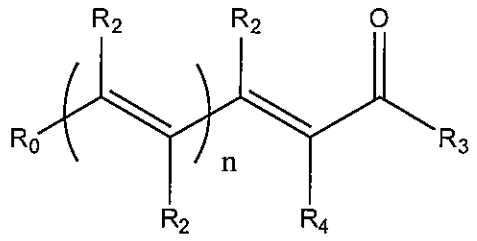
35. The pharmaceutical composition as recited in claim 34, wherein said pharmaceutical composition is a topical pharmaceutical composition.

36. A pharmaceutical composition comprising a compound as recited in claim 14, together with a pharmaceutically acceptable carrier.

37. The pharmaceutical composition as recited in claim 36, wherein said pharmaceutical composition is a topical pharmaceutical composition.

CLAIMS

1. A compound of structural Formula I:



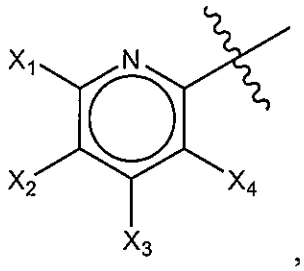
(I)

or a pharmaceutically acceptable salt or solvate thereof, wherein:

n is 1;

R_0 is R_1

R_1 is:

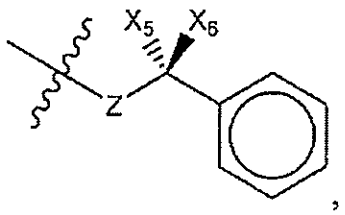


,

wherein X_1 is halogen, X_2, X_3, and X_4, are each independently hydrogen, halogen, $alkyl_{(C1-12)}$, $alkoxy_{(C1-12)}$, OH, trihalomethyl, or NO_2;

R_2 is hydrogen;

R_3 is:



,

X_5 and X_6 are each independently hydrogen, $alkyl_{(C1-12)}$, or $cycloalkyl_{(C1-12)}$;

Z is NH; and

R_4 is CN.

2. The compound as recited in claim 1, wherein:

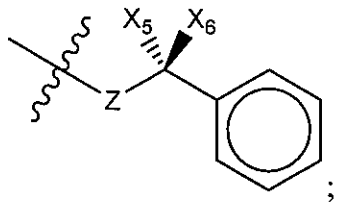
n is 1;

R_0 is R_1;

X_1 is halogen, and X_2, X_3, and X_4 are each hydrogen;

R_2 is hydrogen;

R_3 is:



;

X_5 and X_6 are each independently hydrogen, $alkyl_{(C1-7)}$, or $cycloalkyl_{(C1-7)}$;

Z is NH; and

R_4 is CN.

3. The compound as recited in claim 2, wherein at least one of X_5 and X_6 is selected from the group consisting of alkyl or cycloalkyl.

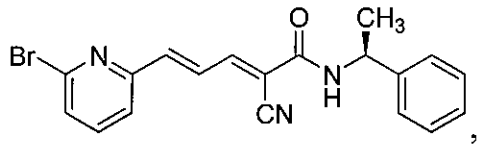
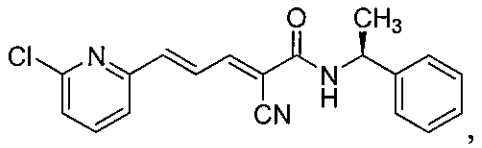
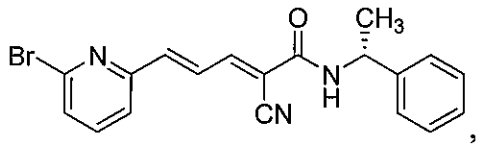
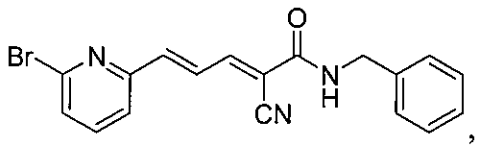
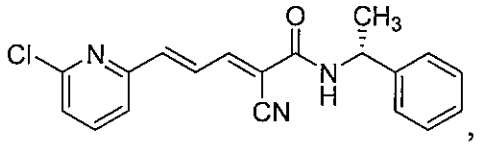
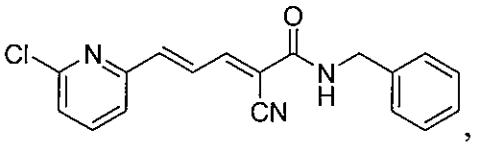
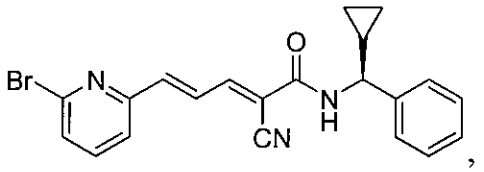
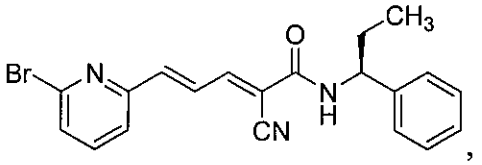
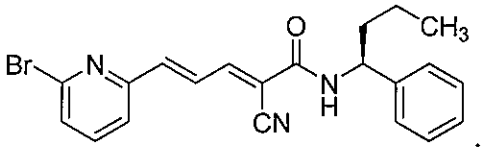
4. The compound as recited in claim 2, wherein:

X_1 is Br or Cl.

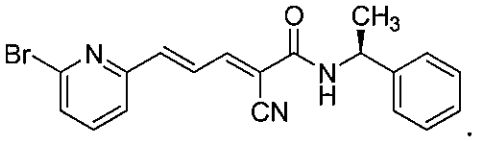
5. The compound as recited in claim 1, wherein:

X_5 and X_6 are each independently hydrogen, cyclopropyl, or $-CH_3$.

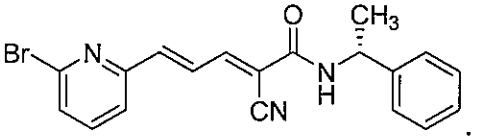
6. A compound selected from the group consisting of:


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7. A compound having the structural formula:


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8. A compound having the structural formula:


.

9. Use of a compound as recited in claim 2 for the treatment of a disease selected from the group consisting of cancer, proliferative angiogenic conditions, proliferative skin disorders, central nervous system diseases, inflammatory disorders, and auto-immune diseases.

10. The use as recited in claim 9, wherein said cancer is selected from the group consisting of leukemia, HTLV-1-dependent leukemia, erythroleukaemia, acute

myelogenous leukemia, chronic myelogenous leukemia, large granular lymphocyte leukemia, lymphoma , Burkitt's lymphoma, mycosis fungoides, cutaneous T-cell lymphoma, non-Hodgkins lymphoma, anaplastic large-cell lymphoma, breast cancer, head and neck cancer, melanoma, ovarian cancer, lung cancer, pancreatic cancer, prostate cancer, bladder cancer, high grade gliomas, brain metastasis, skin cancer, colon cancer, myelodysplastic syndrome, and multiple myeloma.

11. The use as recited in claim 10, wherein said cancer is cutaneous T-cell lymphoma.

12. The use as recited in claim 9, wherein said proliferative angiogenic condition is selected from the group consisting of telangectasia, venous angiomas, hemangioblastoma, and polycythemia vera.

13. The use as recited in claim 9, wherein said proliferative skin disorder is selected from the group consisting of topical dermatitis, psoriasis, and rosacea.

14. The use as recited in claim 9, wherein said proliferative skin disorder is psoriasis.

15. The use as recited in claim 9, wherein said central nervous system disease is selected from the group consisting of multiple sclerosis and progressive multifocal leukoencephalopathy.

16. The use as recited in claim 9, wherein said inflammatory disorder is selected from the group consisting of osteoarthritis, rheumatoid arthritis, Crohn's disease, and ulcerative colitis.

17. The use as recited in claim 9, wherein said auto-immune disease is lupus.

18. Use of a compound as recited in claim 7 for the treatment of a disease selected from the group consisting of cancer, proliferative angiogenic conditions, proliferative skin disorders, central nervous system diseases, inflammatory disorders, and auto-immune diseases.

19. The use as recited in claim 18, wherein said cancer is selected from the group consisting of leukemia, HTLV-1-dependent leukemia, erythroleukaemia, acute myelogenous leukemia, chronic myelogenous leukemia, large granular lymphocyte

leukemia, lymphoma , Burkitt's lymphoma, mycosis fungoides, cutaneous T-cell lymphoma, non-Hodgkins lymphoma, anaplastic large-cell lymphoma, breast cancer, head and neck cancer, melanoma, ovarian cancer, lung cancer, pancreatic cancer, prostate cancer, bladder cancer, high grade gliomas, brain metastasis, skin cancer, colon cancer, myelodysplastic syndrome, and multiple myeloma.

20. The use as recited in claim 19, wherein said cancer is cutaneous T-cell lymphoma.

21. The use as recited in claim 18, wherein said proliferative angiogenic condition is selected from the group consisting of telangectasia, venous angiomas, hemangioblastoma, and polycythemia vera.

22. The use as recited in claim 18, wherein said proliferative skin disorder is selected from the group consisting of topical dermatitis, psoriasis, and rosacea.

23. The use as recited in claim 18, wherein said proliferative skin disorder is psoriasis.

24. The use as recited in claim 18, wherein said central nervous system disease is selected from the group consisting of multiple sclerosis and progressive multifocal leukoencephalopathy.

25. The use as recited in claim 18, wherein said inflammatory disorder is selected from the group consisting of osteoarthritis, rheumatoid arthritis, Crohn's disease, and ulcerative colitis.

26. The use as recited in claim 18, wherein said auto-immune disease is lupus.

27. A pharmaceutical composition comprising a compound as recited in claim 1, together with a pharmaceutically acceptable carrier.

28. The pharmaceutical composition as recited in claim 27, wherein said pharmaceutical composition is a topical pharmaceutical composition.

29. A pharmaceutical composition comprising a compound as recited in claim 7, together with a pharmaceutically acceptable carrier.

30. The pharmaceutical composition comprising as recited in claim 29, wherein said pharmaceutical composition is a topical pharmaceutical composition.