5-{3-(Cyanomethyl)-3-[4-(7H-pyrrolo[2,3-d]pyrimidin-4-yl)-1H-pyrazol-1-yl]azetidin-1-yl}-N-[(1S)-1-cyclopropyl-2,2,2-trifluoroethyl]pyrazine-2-carboxamide;

5-{3-(Cyanomethyl)-3-[4-(7H-pyrrolo[2,3-d]pyrimidin-4-yl)-1H-pyrazol-1-yl]azetidin-1-yl}-N-[1-(trifluoromethyl)cyclopropyl]pyrazine-2-carboxamide;

5-{3-(Cyanomethyl)-3-[4-(1H-pyrrolo[2,3-b]pyridin-4-yl)-1H-pyrazol-1-yl]azetidin-1-yl}-N-isopropylpyrazine-2-carboxamide;

5-{3-(Cyanomethyl)-3-[4-(1H-pyrrolo[2,3-b]pyridin-4-yl)-1H-pyrazol-1-yl]azetidin-1-yl}-N-[(1S)-2,2,2-trifluoro-1-methylethyl]pyrazine-2-carboxamide;

5-{3-(Cyanomethyl)-3-[4-(1H-pyrrolo[2,3-b]pyridin-4-yl)-1H-pyrazol-1-yl]azetidin-1-yl}-N-(2,2,2-trifluoroethyl)pyrazine-2-carboxamide;

4-{3-(Cyanomethyl)-3-[4-(7H-pyrrolo[2,3-d]pyrimidin-4-yl)-1H-pyrazol-1-yl]azetidin-1-yl}-N-(2,2-difluoroethyl)-2,5-difluorobenzamide;

4-{3-(Cyanomethyl)-3-[4-(7H-pyrrolo[2,3-d]pyrimidin-4-yl)-1H-pyrazol-1-yl]azetidin-1-yl}-N-[(1S)-1-cyclopropyl-2,2,2-trifluoroethyl]benzamide;

4-{3-(Cyanomethyl)-3-[4-(7H-pyrrolo[2,3-d]pyrimidin-4-yl)-1H-pyrazol-1-yl]azetidin-1-yl}-N-[(1R)-1-cyclopropylethyl]-2-fluorobenzamide;

5-{3-(Cyanomethyl)-3-[4-(1H-pyrrolo[2,3-b]pyridin-4-yl)-1H-pyrazol-1-yl]azetidin-1-yl}-N-[1-(trifluoromethyl)cyclopropyl]pyridine-2-carboxamide;

5-{3-(Cyanomethyl)-3-[4-(1H-pyrrolo[2,3-b]pyridin-4-yl)-1H-pyrazol-1-yl]azetidin-1-yl}-N-[(1S)-1-cyclopropylethyl]pyrazine-2-carboxamide; and

5-{3-(Cyanomethyl)-3-[4-(1H-pyrrolo[2,3-b]pyridin-4-yl)-1H-pyrazol-1-yl]azetidin-1-yl}-N-[(1S)-1-cyclopropyl-2,2,2-trifluoroethyl]pyrazine-2-carboxamide;

or a pharmaceutically acceptable salt thereof.

33. A composition comprising a compound according to claim 1, or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier.

34. Use of a compound according to any one of claims 1 to 32, or a pharmaceutically acceptable salt thereof for the preparation of a medicament for

use in a method of inhibiting an activity of JAK1 comprising contacting JAK1 with the compound.

35. The use according to claim 34, wherein said compound, or pharmaceutically acceptable salt thereof, is selective for JAK1 over JAK2.

36. Use of a compound of any one of claims 1 to 32, or a pharmaceutically acceptable salt thereof for the preparation of a medicament for use in a method of treating an autoimmune disease, a cancer, a myeloproliferative disorder, an inflammatory disease, a bone resorption disease, or organ transplant rejection in a patient in need thereof, the method comprising administering to said patient a therapeutically effective amount of the compound.

37. The use according to claim 36, wherein said autoimmune disease is a skin disorder, multiple sclerosis, rheumatoid arthritis, psoriatic arthritis, juvenile arthritis, type I diabetes, lupus, inflammatory bowel disease, Crohn's disease, myasthenia gravis, immunoglobulin nephropathies, myocarditis, or autoimmune thyroid disorder.

38. The use according to claim 36, wherein said autoimmune disease is rheumatoid arthritis.

39. The use according to claim 36, wherein said autoimmune disease is a skin disorder.

40. The use according to claim 39, wherein said skin disorder is atopic dermatitis, psoriasis, skin sensitization, skin irritation, skin rash, contact dermatitis or allergic contact sensitization.

41. The use according to claim 36, wherein said cancer is a solid tumor.

42. The use according to claim 36, wherein said cancer is prostate cancer, renal cancer, hepatic cancer, breast cancer, lung cancer, thyroid cancer, Kaposi's sarcoma, Castleman's disease or pancreatic cancer.

43. The use according to claim 36, wherein said cancer is lymphoma, leukemia, or multiple myeloma.

44. The use according to claim 36, wherein said myeloproliferative disorder is polycythemia vera (PV), essential thrombocythemia (ET), primary myelofibrosis (PMF), chronic myelogenous leukemia (CML), chronic myelomonocytic leukemia (CMML), hypereosinophilic syndrome (HES), idiopathic myelofibrosis (IMF), or systemic mast cell disease (SMCD).

45. The use according to claim 36, wherein said myeloproliferative disorder is myelofibrosis.

46. The use according to claim 36, wherein said myeloproliferative disorder is primary myelofibrosis (PMF).

47. The use according to claim 36, wherein said myeloproliferative disorder is post polycythemia vera myelofibrosis (Post-PV MF).

48. The use according to claim 36, wherein said myeloproliferative disorder is post-essential thrombocythemia myelofibrosis (Post-ET MF).

49. The use according to claim 36, wherein said bone resorption disease is osteoporosis, osteoarthritis, bone resorption associated with hormonal imbalance, bone resorption associated with hormonal therapy, bone resorption associated with autoimmune disease, or bone resorption associated with cancer.

5-{3-(Cyanomethyl)-3-[4-(7H-pyrrolo[2,3-d]pyrimidin-4-yl)-1H-pyrazol-1-yl]azetidin-1-yl}-N-[(1S)-1-cyclopropyl-2,2,2-trifluoroethyl]pyrazine-2-carboxamide;

5-{3-(Cyanomethyl)-3-[4-(7H-pyrrolo[2,3-d]pyrimidin-4-yl)-1H-pyrazol-1-yl]azetidin-1-yl}-N-[1-(trifluoromethyl)cyclopropyl]pyrazine-2-carboxamide;

5-{3-(Cyanomethyl)-3-[4-(1H-pyrrolo[2,3-b]pyridin-4-yl)-1H-pyrazol-1-yl]azetidin-1-yl}-N-isopropylpyrazine-2-carboxamide;

5-{3-(Cyanomethyl)-3-[4-(1H-pyrrolo[2,3-b]pyridin-4-yl)-1H-pyrazol-1-yl]azetidin-1-yl}-N-[(1S)-2,2,2-trifluoro-1-methylethyl]pyrazine-2-carboxamide;

5-{3-(Cyanomethyl)-3-[4-(1H-pyrrolo[2,3-b]pyridin-4-yl)-1H-pyrazol-1-yl]azetidin-1-yl}-N-(2,2,2-trifluoroethyl)pyrazine-2-carboxamide;

4-{3-(Cyanomethyl)-3-[4-(7H-pyrrolo[2,3-d]pyrimidin-4-yl)-1H-pyrazol-1-yl]azetidin-1-yl}-N-(2,2-difluoroethyl)-2,5-difluorobenzamide;

4-{3-(Cyanomethyl)-3-[4-(7H-pyrrolo[2,3-d]pyrimidin-4-yl)-1H-pyrazol-1-yl]azetidin-1-yl}-N-[(1S)-1-cyclopropyl-2,2,2-trifluoroethyl]benzamide;

4-{3-(Cyanomethyl)-3-[4-(7H-pyrrolo[2,3-d]pyrimidin-4-yl)-1H-pyrazol-1-yl]azetidin-1-yl}-N-[(1R)-1-cyclopropylethyl]-2-fluorobenzamide;

5-{3-(Cyanomethyl)-3-[4-(1H-pyrrolo[2,3-b]pyridin-4-yl)-1H-pyrazol-1-yl]azetidin-1-yl}-N-[1-(trifluoromethyl)cyclopropyl]pyridine-2-carboxamide;

5-{3-(Cyanomethyl)-3-[4-(1H-pyrrolo[2,3-b]pyridin-4-yl)-1H-pyrazol-1-yl]azetidin-1-yl}-N-[(1S)-1-cyclopropylethyl]pyrazine-2-carboxamide; and

5-{3-(Cyanomethyl)-3-[4-(1H-pyrrolo[2,3-b]pyridin-4-yl)-1H-pyrazol-1-yl]azetidin-1-yl}-N-[(1S)-1-cyclopropyl-2,2,2-trifluoroethyl]pyrazine-2-carboxamide;

or a pharmaceutically acceptable salt thereof.

33. A compound, which is 4-{3-(cyanomethyl)-3-[4-(7H-pyrrolo[2,3-d]pyrimidin-4-yl)-1H-pyrazol-1-yl]azetidin-1-yl}-N-isopropylbenzamide, or a pharmaceutically acceptable salt thereof.

34. A compound, which is 4-{3-(cyanomethyl)-3-[4-(7H-pyrrolo[2,3-d]pyrimidin-4-yl)-1H-pyrazol-1-yl]azetidin-1-yl}-N-(2,2,2-trifluoro-1-methylethyl)benzamide, or a pharmaceutically acceptable salt thereof.

35. A compound, which is 4-{3-(cyanomethyl)-3-[4-(7H-pyrrolo[2,3-d]pyrimidin-4-yl)-1H-pyrazol-1-yl]azetidin-1-yl}-2,5-difluoro-N-[(1S)-2,2,2-trifluoro-1-methylethyl]benzamide, or a pharmaceutically acceptable salt thereof.

36. The compound according to claim 1, which is 4-{3-(cyanomethyl)-3-[4-(7H-pyrrolo[2,3-d]pyrimidin-4-yl)-1H-pyrazol-1-yl]azetidin-1-yl}-2,5-difluoro-N-[(1R)-2,2,2-trifluoro-1-methylethyl]benzamide, or a pharmaceutically acceptable salt thereof.

37. A composition comprising a compound according to any one of Claims 1 to 36, or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier.

38. Use of a compound of any one of claims 1 to 36, or a pharmaceutically acceptable salt thereof for preparation of a medicament for inhibiting an activity of JAK1.

39. The use according to claim 38, wherein said compound, or pharmaceutically acceptable salt thereof, is selective for JAK1 over JAK2.

40. Use of a compound of any one of claims 1 to 36, or a pharmaceutically acceptable salt thereof for the preparation of a medicament for treatment of an autoimmune disease, a cancer, a myeloproliferative disorder, an inflammatory disease, a bone resorption disease, or organ transplant rejection in a patient in need thereof.

41. The use according to claim 40, wherein said autoimmune disease is a skin disorder, multiple sclerosis, rheumatoid arthritis, psoriatic arthritis, juvenile arthritis, type I diabetes, lupus, inflammatory bowel disease, Crohn’s disease,

myasthenia gravis, immunoglobulin nephropathies, myocarditis, or autoimmune thyroid disorder.

42. The use according to claim 40, wherein said autoimmune disease is rheumatoid arthritis.

43. The use according to claim 40, wherein said autoimmune disease is a skin disorder.

44. The use according to claim 43, wherein said skin disorder is atopic dermatitis, psoriasis, skin sensitization, skin irritation, skin rash, contact dermatitis or allergic contact sensitization.

45. The use according to claim 40, wherein said cancer is a solid tumor.

46. The use according to claim 40, wherein said cancer is prostate cancer, renal cancer, hepatic cancer, breast cancer, lung cancer, thyroid cancer, Kaposi's sarcoma, Castleman's disease or pancreatic cancer.

47. The use according to claim 40, wherein said cancer is lymphoma, leukemia, or multiple myeloma.

48. The use according to claim 40, wherein said myeloproliferative disorder is polycythemia vera (PV), essential thrombocythemia (ET), primary myelofibrosis (PMF), chronic myelogenous leukemia (CML), chronic myelomonocytic leukemia (CMML), hypereosinophilic syndrome (HES), idiopathic myelofibrosis (IMF), or systemic mast cell disease (SMCD).

49. The use according to claim 40, wherein said myeloproliferative disorder is myelofibrosis.

50. The use according to claim 40, wherein said myeloproliferative disorder is primary myelofibrosis (PMF).

51. The use according to claim 40, wherein said myeloproliferative disorder is post polycythemia vera myelofibrosis (Post-PV MF).

52. The use according to claim 40, wherein said myeloproliferative disorder is post-essential thrombocythemia myelofibrosis (Post-ET MF).

53. The use according to claim 40, wherein said bone resorption disease is osteoporosis, osteoarthritis, bone resorption associated with hormonal imbalance, bone resorption associated with hormonal therapy, bone resorption associated with autoimmune disease, or bone resorption associated with cancer.