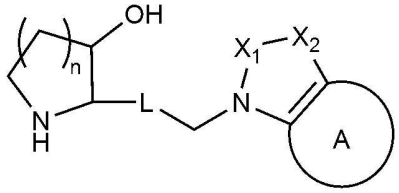
Claims

1. A compound represented by the following Chemical Formula 1, or a pharmaceutically acceptable salt thereof:

[Chemical Formula 1]



in Chemical Formula 1,

n is 1 or 2,

L is $-CH_2CH_2-$, -CH=C(R')-, or -C≡C-,

wherein R' is hydrogen, C_{1-4} alkyl, or halogen,

X_1 is CR_1R_2, NR_1, or -CO-,

X_2 is CR_3R_4, or NR_3,

wherein R_1 to R_4 are each independently hydrogen, C_{1-4} alkyl, C_{1-4} hydroxyalkyl, hydroxy, amino, carboxy, -COO(C_{1-4} alkyl), $-CONH_2$, -CONH(C_{1-4} alkyl), -CON (C_{1-4} alkyl)$_2$, or pyrazolyl unsubstituted or substituted with C_{1-4} haloalkyl; or R_1 and R_3, together with each other, links X_1 and X_2 via a double bond, and

A is benzene, pyridine, pyrimidine, or pyrimidinedione ring,

wherein A is unsubstituted or substituted with one to three substituents each independently selected from the group consisting of a ring-type substituent selected from the group consisting of furanyl, imidazolyl, isoxazolyl, phenyl, pyrazolyl, pyridinonyl, pyridinyl, pyrrolyl, thiazolyl, and thiophenyl; C_{1-4} alkyl; C_{1-4} alkoxy; C_{1-4} haloalkyl; C_{1-4} haloalkoxy; halogen; di(C_{1-4} alkyl)amino; nitro; -COO(C_{1-4} alkyl); dihydropyranyl; morpholino; piperidinyl; and pyrrolidinyl; and

wherein the ring-type substituent is unsubstituted or substituted with one or two substituents each independently selected from the group consisting of C_{1-5} alkyl, C_{1-4} haloalkyl, C_{3-6} cycloalkyl, monovalent of C_{2-5} alkylene carbonate, -COO(C_{1-4} alkyl), halogen, cyano, thiazolyl, and (1,3-dioxolan-2-yl)methyl.

2. The compound or a pharmaceutically acceptable salt thereof according to claim 1,

wherein, A is unsubstituted or substituted with one to three substituents each independently selected from the group consisting of C_{1-4} alkyl; C_{1-4} alkoxy; C_{1-4} haloalkyl; halogen; phenyl unsubstituted or substituted with halogen, or C_{1-4} haloalkyl; pyrazolyl unsubstituted or substituted with C_{1-5} alkyl, thiazolyl, or C_{1-4} haloalkyl; thiophenyl unsubstituted or substituted with C_{1-5} alkyl, or -COO(C_{1-4} alkyl); pyrrolyl unsubstituted or substituted with C_{1-5} alkyl and/or -COO(C_{1-4} alkyl); di(C_{1-4} alkyl)amino; morpholino; piperidinyl; furanyl; and pyrrolidinyl.

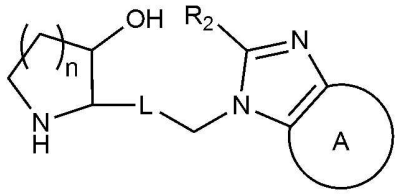
3. The compound or a pharmaceutically acceptable salt thereof according to claim 1,

wherein L is $-CH_2CH_2-$, -CH=CH-, -CH=CF-, $-CH=C(CH_3)-$, or -C≡C-.

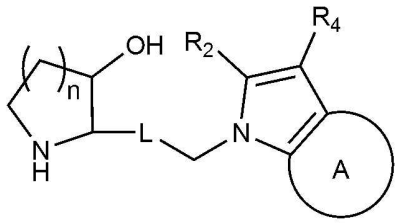
4. The compound or a pharmaceutically acceptable salt thereof according to claim 1,

wherein the compound represented by Chemical Formula 1 is represented by the following Chemical Formulas 1-1 to 1-5:

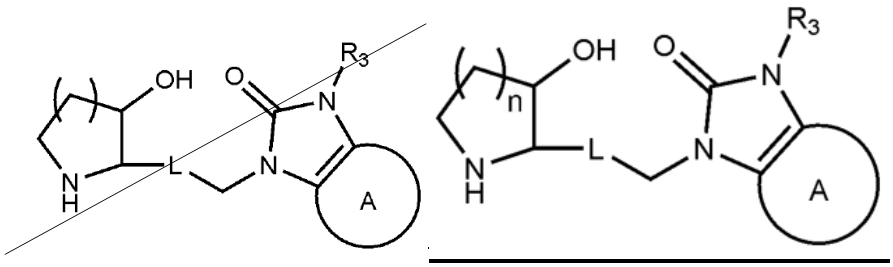
[Chemical Formula 1-1]



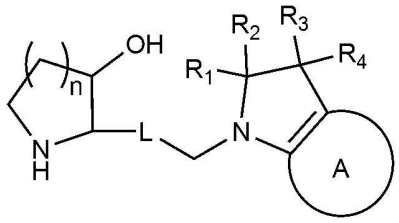
[Chemical Formula 1-2]



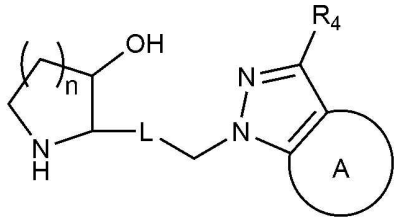
[Chemical Formula 1-3]



[Chemical Formula 1-4]



[Chemical Formula 1-5]



in Chemical Formulas 1-1 to 1-5,

n, L, R_1 to R_4 and A are as defined in claim 1.

5. The compound or a pharmaceutically acceptable salt thereof according to claim 1,

wherein R_1 to R_4 are each independently hydrogen, methyl, hydroxymethyl, hydroxy, amino, carboxy, $-COOCH_3$, $-CONH_2$, $-CONHCH_3$, or $-CON(CH_3)_2$; or R_1 and R_3, together with each other, link X_1 and X_2 via a double bond.

6. The compound or a pharmaceutically acceptable salt thereof according to claim 1,

wherein A is benzene, pyridine, pyrimidine, or pyrimidinedione ring, and

A is unsubstituted or substituted with one to three substituents each independently selected from the group consisting of methyl, isobutyl, methoxy, trifluoromethyl, fluoro, chloro, bromo, phenyl, phenyl substituted with fluoro, phenyl substituted with chloro, phenyl substituted with trifluoromethyl, thiophenyl, thiophenyl substituted with methyl, thiophenyl substituted with $-COOCH_3$, pyrazolyl substituted with difluoromethyl, pyrazolyl substituted with methyl, pyrazolyl substituted with thiazolyl, pyrrolyl substituted with methyl and $-COOCH_2CH_3$, furanyl, dimethylamino, diethylamino, methylethylamino, morpholino, piperidinyl, and pyrrolidinyl.

7. The compound or a pharmaceutically acceptable salt thereof according to claim 1,

wherein A is benzene, and

A is unsubstituted or substituted with one to three substituents each independently selected from the group consisting of C_{1-4} alkyl; C_{1-4} alkoxy; halogen; and phenyl unsubstituted or substituted with halogen or C_{1-4} haloalkyl.

8. The compound or a pharmaceutically acceptable salt thereof according to claim 1, wherein A is pyridine, and

A is unsubstituted or substituted with one or two substituents each independently selected from the group consisting of C_{1-4} alkyl; C_{1-4} alkoxy; halogen; and phenyl substituted with halogen.

9. The compound or a pharmaceutically acceptable salt thereof according to claim 1, wherein A is pyrimidine, and

A is substituted with a substituent selected from the group consisting of halogen; di(C_{1-4} alkyl)amino; morpholino; piperidinyl; and pyrrolidinyl.

10. The compound or a pharmaceutically acceptable salt thereof according to claim 1, wherein A is pyrimidinedione, and

A is unsubstituted or substituted with one or two C_{1-4} alkyl.

11. A compound or a pharmaceutically acceptable salt thereof, wherein the compound is selected from the group consisting of:

1) (2R,3S)-2-(3-(6-chloro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,
2) (2R,3S)-2-(3-(4-bromo-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,
3) (2R,3S)-2-(3-(5-bromo-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,
4) (2R,3S)-2-(3-(6-bromo-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,
5) (2R,3S)-2-(3-(7-bromo-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,
6) (2R,3S)-2-(3-(4-fluoro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,
7) (2R,3S)-2-(3-(5-fluoro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,
8) (2R,3S)-2-(3-(6-fluoro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,
9) (2R,3S)-2-(3-(7-fluoro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

10) (2R,3S)-2-(3-(4-chloro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

11) (2R,3S)-2-(3-(5-chloro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

12) (2R,3S)-2-(3-(7-chloro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

13) (2R,3S)-2-(3-(6-methyl-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

14) (2R,3S)-2-(3-(5-methyl-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

15) (2R,3S)-2-(3-(6-(trifluoromethyl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

16) (2R,3S)-2-(3-(7-(trifluoromethyl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

17) (2R,3S)-2-(3-(7-(trifluoromethoxy)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

18) (2R,3S)-2-(3-(4-(pyrrolidin-1-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

19) (2R,3S)-2-(3-(4-(piperidin-1-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

20) (2R,3S)-2-(3-(4-(3-fluorophenyl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

21) (2R,3S)-2-(3-(4-(3-chlorophenyl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

22) (2R,3S)-2-(3-(5-(3-fluorophenyl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

23) (2R,3S)-2-(3-(6-(2-fluorophenyl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

24) (2R,3S)-2-(3-(6-(3-fluorophenyl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

25) (2R,3S)-2-(3-(6-(4-fluorophenyl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

26) (2R,3S)-2-(3-(7-(2-fluorophenyl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

27) (2R,3S)-2-(3-(7-(3-fluorophenyl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-

ol,

28) (2R,3S)-2-(3-(7-(4-fluorophenyl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

29) (2R,3S)-2-(3-(5-(1H-pyrazol-4-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

30) (2R,3S)-2-(3-(6-(1H-pyrazol-4-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

31) (2R,3S)-2-(3-(7-(1H-pyrazol-4-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

32) (2R,3S)-2-(3-(6-chloro-5-fluoro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

33) (2R,3S)-2-(3-(6-bromo-5-fluoro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

34) (2R,3S)-2-(3-(5-chloro-6-fluoro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

35) (2R,3S)-2-(3-(5-bromo-6-fluoro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

36) (2R,3S)-2-(3-(6-bromo-5-chloro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

37) (2R,3S)-2-(3-(6-chloro-5-methoxy-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

38) (2R,3S)-2-(3-(6-fluoro-5-methoxy-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

39) (2R,3S)-2-(3-(5-fluoro-6-methyl-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

40) (2R,3S)-2-(3-(4,5-dichloro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

41) (2S,3S)-2-(3-(4,5-dichloro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

42) (2S,3R)-2-(3-(4,5-dichloro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

43) (2R,3R)-2-(3-(4,5-dichloro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

44) (2R,3S)-2-(3-(4-chloro-5-methyl-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-

ol,

45) (2R,3S)-2-(3-(5-bromo-4-methyl-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

46) (2R,3S)-2-(3-(5-chloro-4-methyl-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

47) (2R,3S)-2-(3-(5-bromo-4-fluoro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

48) (2R,3S)-2-(3-(6-bromo-7-fluoro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

49) (2R,3S)-2-(3-(4,5-difluoro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

50) (2R,3S)-2-(3-(6,7-difluoro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

51) (2R,3S)-2-(3-(4,5-dimethyl-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

52) (2R,3S)-2-(3-(5,6-difluoro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

53) (2R,3S)-2-(3-(5,6-dichloro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

54) (2R,3S)-2-(3-(5,6-dibromo-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

55) (2R,3S)-2-(3-(5,6-dimethyl-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

56) (2R,3S)-2-(3-(6,7-dichloro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

57) (2R,3S)-2-(3-(4,6-difluoro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

58) (2R,3S)-2-(3-(5,7-difluoro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

59) (2R,3S)-2-(3-(4-chloro-5-methoxy-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

60) (2R,3S)-2-(3-(7-chloro-6-methoxy-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

61) (2R,3S)-2-(3-(6-chloro-4-methyl-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

62) (2R,3S)-2-(3-(4-chloro-5-fluoro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

63) (2R,3S)-2-(3-(6-bromo-4-methyl-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

64) (2R,3S)-2-(3-(5-fluoro-4-methyl-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-

ol,

65) (2R,3S)-2-(3-(6-fluoro-7-methyl-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

66) (2R,3S)-2-(3-(4-chloro-5-(trifluoromethyl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

67) (2R,3S)-2-(3-(7-chloro-6-(trifluoromethyl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

68) methyl 7-bromo-1-(3-((2R,3S)-3-hydroxypiperidin-2-yl)propyl)-1H-benzo[d]imidazole-5-carboxylate,

69) (2R,3S)-2-(3-(7-bromo-5-chloro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

70) (2R,3S)-2-(3-(5-bromo-7-chloro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

71) (2R,3S)-2-(3-(7-bromo-5-(trifluoromethyl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

72) (2R,3S)-2-(3-(6-bromo-4-fluoro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

73) (2R,3S)-2-(3-(5-bromo-7-fluoro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

74) (2R,3S)-2-(3-(7-chloro-4-fluoro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

75) (2R,3S)-2-(3-(5-bromo-4-nitro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

76) (2R,3S)-2-(3-(6-bromo-7-nitro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

77) (2R,3S)-2-(3-(4-chloro-5-nitro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

78) (2R,3S)-2-(3-(7-chloro-5-(trifluoromethyl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

79) (2R,3S)-2-(3-(5-chloro-7-fluoro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

80) (2R,3S)-2-(3-(5,7-dichloro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

81) (2R,3S)-2-(3-(5-chloro-7-(1H-pyrazol-4-yl)-1H-benzo[d]imidazol-1-

yl)propyl)piperidin-3-ol,

82) (2R,3S)-2-(3-(7-(1H-pyrazol-4-yl)-5-(trifluoromethyl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

83) (2R,3S)-2-(3-(5-chloro-7-(3-fluorophenyl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

84) (2R,3S)-2-(3-(7-(3-fluorophenyl)-5-(trifluoromethyl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

85) (2R,3S)-2-(3-(5-chloro-7-(2-methylthiazol-5-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

86) (2R,3S)-2-(3-(5-chloro-7-(pyridin-3-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

87) (2R,3S)-2-(3-(5-chloro-7-(5-fluoropyridin-3-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

88) 5-(5-chloro-1-(3-((2R,3S)-3-hydroxypiperidin-2-yl)propyl)-1H-benzo[d]imidazol-7-yl)-1-methylpyridin-2(1H)-one,

89) (2R,3S)-2-(3-(5-chloro-7-(1-(difluoromethyl)-1H-pyrazol-4-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

90) (2R,3S)-2-(3-(5-chloro-7-(isoxazol-3-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

91) (2R,3S)-2-(3-(5-chloro-7-(thiophen-3-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

92) (2R,3S)-2-(3-(5-chloro-7-(2-methylthiophen-3-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

93) (2R,3S)-2-(3-(5-chloro-7-(3,5-dimethylisoxazol-4-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

94) (2R,3S)-2-(3-(5-chloro-7-(3,6-dihydro-2H-pyran-4-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

95) (2R,3S)-2-(3-(7-(1-((1,3-dioxolan-2-yl)methyl)-1H-pyrazol-4-yl)-5-chloro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

96) (2R,3S)-2-(3-(5-chloro-7-(1-methyl-1H-imidazol-5-yl)-1H-benzo[d]imidazol-1-

yl)propyl)piperidin-3-ol,

97) (2R,3S)-2-(3-(5-chloro-7-(1-methyl-1H-pyrazol-4-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

98) (2R,3S)-2-(3-(7-(pyrrolidin-1-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

99) (2R,3S)-2-(3-(5-chloro-7-(pyrrolidin-1-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

100) (2R,3S)-2-(3-(5-chloro-7-(2-cyclopropylthiazol-5-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

101) (2R,3S)-2-(3-(5-chloro-7-(1-(thiazol-2-yl)-1H-pyrazol-4-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

102) (2R,3S)-2-(3-(5-chloro-7-(1-(oxetan-3-yl)-1H-pyrazol-4-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

103) (2R,3S)-2-(3-(5-chloro-7-(2-(tetrahydro-2H-pyran-4-yl)thiazol-4-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

104) (2R,3S)-2-(3-(5-chloro-7-(furan-3-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

105) 4-(5-chloro-1-(3-((2R,3S)-3-hydroxypiperidin-2-yl)propyl)-1H-benzo[d]imidazol-7-yl)thiazole-2-carbonitrile,

106) (2R,3S)-2-(3-(7-(1-(tert-butyl)-1H-pyrazol-4-yl)-5-chloro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

107) (2R,3S)-2-(3-(5-chloro-7-(1-isopentyl-1H-pyrazol-4-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

108) (2R,3S)-2-(3-(5-chloro-7-(1-isopropyl-1H-pyrazol-4-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

109) (2R,3S)-2-(3-(5-chloro-7-(4-methylthiophen-3-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

110) ethyl 3-(5-chloro-1-(3-((2R,3S)-3-hydroxypiperidin-2-yl)propyl)-1H-benzo[d]imidazol-7-yl)furan-2-carboxylate,

111) methyl 4-(5-chloro-1-(3-((2R,3S)-3-hydroxypiperidin-2-yl)propyl)-1H-

benzo[d]imidazol-7-yl)thiophene-2-carboxylate,

112) (2R,3S)-2-(3-(5-chloro-7-(1-(2-fluoroethyl)-1H-pyrazol-4-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

113) (2R,3S)-2-(3-(7-(1-butyl-1H-pyrazol-4-yl)-5-chloro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

114) (2R,3S)-2-(3-(5-chloro-7-(2,5-dimethylthiophen-3-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

115) (2R,3S)-2-(3-(5-chloro-7-(1-isobutyl-1H-pyrazol-4-yl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

116) ethyl 4-(5-chloro-1-(3-((2R,3S)-3-hydroxypiperidin-2-yl)propyl)-1H-benzo[d]imidazol-7-yl)-1-methyl-1H-pyrrole-2-carboxylate,

117) (2R,3S)-2-(3-(5-chloro-1H-imidazo[4,5-b]pyridin-1-yl)propyl)piperidin-3-ol,

118) (2R,3S)-2-(3-(5-chloro-3H-imidazo[4,5-b]pyridin-3-yl)propyl)piperidin-3-ol,

119) (2R,3S)-2-(3-(5-bromo-1H-imidazo[4,5-b]pyridin-1-yl)propyl)piperidin-3-ol,

120) (2R,3S)-2-(3-(6-bromo-1H-imidazo[4,5-b]pyridin-1-yl)propyl)piperidin-3-ol,

121) (2R,3S)-2-(3-(5-methyl-1H-imidazo[4,5-b]pyridin-1-yl)propyl)piperidin-3-ol,

122) (2R,3S)-2-(3-(6-chloro-1H-imidazo[4,5-c]pyridin-1-yl)propyl)piperidin-3-ol.

123) (2R,3S)-2-(3-(6-chloro-3H-imidazo[4,5-c]pyridin-3-yl)propyl)piperidin-3-ol,

124) (2R,3S)-2-(3-(6-bromo-1H-imidazo[4,5-c]pyridin-1-yl)propyl)piperidin-3-ol,

125) (2R,3S)-2-(3-(6-bromo-3H-imidazo[4,5-c]pyridin-3-yl)propyl)piperidin-3-ol,

126) (2R,3S)-2-(3-(7-chloro-1H-imidazo[4,5-b]pyridin-1-yl)propyl)piperidin-3-ol,

127) (2R,3S)-2-(3-(5,6-dichloro-1H-imidazo[4,5-b]pyridin-1-yl)propyl)piperidin-3-ol,

128) (2R,3S)-2-(3-(7-bromo-1H-imidazo[4,5-c]pyridin-1-yl)propyl)piperidin-3-ol,

129) (2R,3S)-2-(3-(5-(trifluoromethyl)-3H-imidazo[4,5-b]pyridin-3-yl)propyl)piperidin-3-ol,

130) (2R,3S)-2-(3-(6,7-dichloro-3H-imidazo[4,5-b]pyridin-3-yl)propyl)piperidin-3-ol,

131) (2R,3S)-2-(3-(6-chloro-7-methyl-3H-imidazo[4,5-b]pyridin-3-yl)propyl)piperidin-3-ol,

132) (2R,3S)-2-(3-(6-bromo-7-methyl-3H-imidazo[4,5-b]pyridin-3-yl)propyl)piperidin-3-ol,

133) (2R,3S)-2-(3-(6-bromo-7-chloro-3H-imidazo[4,5-b]pyridin-3-yl)propyl)piperidin-3-ol,

134) (2R,3S)-2-(3-(7-chloro-6-(3-chlorophenyl)-3H-imidazo[4,5-b]pyridin-3-yl)propyl)piperidin-3-ol,

135) (2R,3S)-2-(3-(2-chloro-7H-purin-7-yl)propyl)piperidin-3-ol,

136) (2R,3S)-2-(3-(2-chloro-9H-purin-9-yl)propyl)piperidin-3-ol,

137) (2R,3S)-2-(3-(6-(dimethylamino)-9H-purin-9-yl)propyl)piperidin-3-ol,

138) (2R,3S)-2-(3-(6-(diethylamino)-9H-purin-9-yl)propyl)piperidin-3-ol,

139) (2R,3S)-2-(3-(6-(ethyl(methyl)amino)-9H-purin-9-yl)propyl)piperidin-3-ol,

140) (2R,3S)-2-(3-(6-morpholino-9H-purin-9-yl)propyl)piperidin-3-ol,

141) (2R,3S)-2-(3-(6-(piperidin-1-yl)-9H-purin-9-yl)propyl)piperidin-3-ol,

142) (2R,3S)-2-(3-(6-(pyrrolidin-1-yl)-9H-purin-9-yl)propyl)piperidin-3-ol,

143) 1-(3-((2R,3S)-3-hydroxypiperidin-2-yl)propyl)-1H-benzo[d]imidazol-2-ol,

144) 5,6-dichloro-1-(3-((2R,3S)-3-hydroxypiperidin-2-yl)propyl)-1H-benzo[d]imidazol-2-ol,

145) (2R,3S)-2-(3-(2-(hydroxymethyl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

146) (2R,3S)-2-(3-(2-(hydroxymethyl)-4,5-dimethyl-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

147) (2R,3S)-2-(3-(5,6-dichloro-2-(hydroxymethyl)-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

148) (2R,3S)-2-(3-(2-amino-5,6-dichloro-1H-benzo[d]imidazol-1-yl)propyl)piperidin-3-ol,

149) methyl 7-bromo-1-(3-((2R,3S)-3-hydroxypiperidin-2-yl)propyl)-1H-indole-3-carboxylate,

150) methyl 5-bromo-1-(3-((2R,3S)-3-hydroxypiperidin-2-yl)propyl)-1H-indole-3-carboxylate,

151) methyl 6-bromo-1-(3-((2R,3S)-3-hydroxypiperidin-2-yl)propyl)-1H-indole-3-carboxylate,

152) methyl 4-chloro-1-(3-((2R,3S)-3-hydroxypiperidin-2-yl)propyl)-1H-indole-3-

carboxylate,

153) methyl 6-chloro-1-(3-((2R,3S)-3-hydroxypiperidin-2-yl)propyl)-1H-indole-3-carboxylate,

154) methyl 7-chloro-1-(3-((2R,3S)-3-hydroxypiperidin-2-yl)propyl)-1H-indole-3-carboxylate,

155) (2R,3S)-2-(3-(5-chloro-3-cyclopropyl-1H-indazol-1-yl)propyl)piperidin-3-ol,

156) (2R,3S)-2-(3-(5-chloro-3-(trifluoromethyl)-1H-indazol-1-yl)propyl)piperidin-3-ol,

157) (2R,3S)-2-(3-(5-chloro-3-(1-(difluoromethyl)-1H-pyrazol-4-yl)-1H-indazol-1-yl)propyl)piperidin-3-ol,

158) (2R,3S)-2-(3-(6-chloro-3-(1-(difluoromethyl)-1H-pyrazol-4-yl)-1H-indazol-1-yl)propyl)piperidin-3-ol,

159) 1-(3-((2R,3S)-3-hydroxypiperidin-2-yl)propyl)-3-methyl-1H-benzo[d]imidazol-2(3H)-one,

160) 5-bromo-1-(3-((2R,3S)-3-hydroxypiperidin-2-yl)propyl)-1H-benzo[d]imidazol-2(3H)-one,

161) 6-bromo-1-(3-((2R,3S)-3-hydroxypiperidin-2-yl)propyl)-1H-benzo[d]imidazol-2(3H)-one,

162) 7-(3-((2R,3S)-3-hydroxypiperidin-2-yl)propyl)-1,3-dimethyl-1H-purine-2,6(3H,7H)-dione,

163) 7-(3-((2R,3S)-3-hydroxypiperidin-2-yl)propyl)-3-methyl-1H-purine-2,6(3H,7H)-dione,

164) 9-(3-((2R,3S)-3-hydroxypiperidin-2-yl)propyl)-1-methyl-1H-purine-2,6(3H,9H)-dione,

165) 7-(3-((2R,3S)-3-hydroxypiperidin-2-yl)propyl)-3-isobutyl-1-methyl-1H-purine-2,6(3H,7H)-dione,

166) (2R,3S)-2-((E)-3-(5,6-dichloro-1H-benzo[d]imidazol-1-yl)prop-1-enyl)piperidin-3-ol,

167) (2R,3S)-2-((E)-3-(5-fluoro-4-methyl-1H-benzo[d]imidazol-1-yl)prop-1-enyl)piperidin-3-ol,

168) (2R,3S)-2-((E)-3-(5-bromo-4-methyl-1H-benzo[d]imidazol-1-yl)prop-1-enyl)piperidin-3-ol,

169) (2R,3S)-2-((E)-3-(5,6-dimethyl-1H-benzo[d]imidazol-1-yl)prop-1-enyl)piperidin-3-ol,

170) (2R,3S)-2-((E)-3-(5,6-dibromo-1H-benzo[d]imidazol-1-yl)prop-1-enyl)piperidin-3-ol,

171) (2R,3S)-2-((E)-3-(5,6-difluoro-1H-benzo[d]imidazol-1-yl)prop-1-enyl)piperidin-3-ol,

172) (2R,3S)-2-((E)-3-(4,5-dimethyl-1H-benzo[d]imidazol-1-yl)prop-1-enyl)piperidin-3-ol,

173) (2R,3S)-2-((E)-3-(5-chloro-4-methyl-1H-benzo[d]imidazol-1-yl)prop-1-enyl)piperidin-3-ol,

174) (2R,3S)-2-((E)-3-(4,5-dichloro-1H-benzo[d]imidazol-1-yl)prop-1-en-1-yl)piperidin-3-ol,

175) (2R,3S)-2-((E)-3-(4-chloro-5-methyl-1H-benzo[d]imidazol-1-yl)prop-1-en-1-yl)piperidin-3-ol,

176) (2R,3S)-2-((E)-3-(5-bromo-4-nitro-1H-benzo[d]imidazol-1-yl)prop-1-en-1-yl)piperidin-3-ol,

177) (2R,3S)-2-((E)-3-(6-bromo-7-nitro-1H-benzo[d]imidazol-1-yl)prop-1-en-1-yl)piperidin-3-ol,

178) (2R,3S)-2-((E)-3-(4-chloro-5-nitro-1H-benzo[d]imidazol-1-yl)prop-1-en-1-yl)piperidin-3-ol,

179) (2R,3S)-2-((E)-3-(4,6-difluoro-1H-benzo[d]imidazol-1-yl)prop-1-en-1-yl)piperidin-3-ol,

180) (2R,3S)-2-((E)-3-(6-chloro-4-methyl-1H-benzo[d]imidazol-1-yl)prop-1-en-1-yl)piperidin-3-ol,

181) (2R,3S)-2-((E)-3-(7-chloro-5-(trifluoromethyl)-1H-benzo[d]imidazol-1-yl)prop-1-en-1-yl)piperidin-3-ol,

182) (2R,3S)-2-((E)-3-(5,7-dichloro-1H-benzo[d]imidazol-1-yl)prop-1-en-1-yl)piperidin-3-ol,

183) (2R,3S)-2-((E)-3-(5-chloro-7-fluoro-1H-benzo[d]imidazol-1-yl)prop-1-en-1-yl)piperidin-3-ol,

184) (2R,3S)-2-((E)-3-(5-bromo-1H-imidazo[4,5-b]pyridin-1-yl)prop-1-enyl)piperidin-3-ol,

185) (2R,3S)-2-((E)-3-(7-chloro-6-(3-chlorophenyl)-3H-imidazo[4,5-b]pyridin-3-yl)prop-1-enyl)piperidin-3-ol,

186) (2R,3S)-2-((E)-3-(6-bromo-7-methyl-3H-imidazo[4,5-b]pyridin-3-yl)prop-1-enyl)piperidin-3-ol,

187) (2R,3S)-2-((E)-3-(6-bromo-7-chloro-3H-imidazo[4,5-b]pyridin-3-yl)prop-1-enyl)piperidin-3-ol,

188) (2R,3S)-2-((E)-3-(6-chloro-7-methyl-3H-imidazo[4,5-b]pyridin-3-yl)prop-1-enyl)piperidin-3-ol,

189) (2R,3S)-2-((E)-3-(6,7-dichloro-3H-imidazo[4,5-b]pyridin-3-yl)prop-1-enyl)piperidin-3-ol,

190) (2R,3S)-2-((E)-3-(6-(3-chlorophenyl)-1H-benzo[d]imidazol-1-yl)prop-1-enyl)piperidin-3-ol,

191) (2R,3S)-2-((E)-3-(6-(3-fluorophenyl)-1H-benzo[d]imidazol-1-yl)prop-1-enyl)piperidin-3-ol,

192) (2R,3S)-2-((E)-3-(6-(3-(trifluoromethyl)phenyl)-1H-benzo[d]imidazol-1-yl)prop-1-enyl)piperidin-3-ol,

193) (2R,3S)-2-((E)-3-(5-bromo-6,7-difluoro-2-methyl-1H-benzo[d]imidazol-1-yl)prop-1-enyl)piperidin-3-ol,

194) (2R,3S)-2-((E)-3-(indolin-1-yl)prop-1-enyl)piperidin-3-ol,

195) (2R,3S)-2-((E)-3-(5-chloroindolin-1-yl)prop-1-enyl)piperidin-3-ol,

196) (2R,3S)-2-((E)-3-(1H-pyrrolo[2,3-b]pyridin-1-yl)prop-1-enyl)piperidin-3-ol,

197) (2R,3S)-2-((E)-3-(6-chloro-1H-indol-1-yl)prop-1-enyl)piperidin-3-ol,

198) (2R,3S)-2-((E)-3-(6-chloro-1H-indazol-1-yl)prop-1-enyl)piperidin-3-ol,

199) (2R,3S)-2-((E)-3-(4-chloro-7H-pyrrolo[2,3-d]pyrimidin-7-yl)prop-1-enyl)piperidin-3-ol,

200) (2R,3S)-2-((E)-3-(5-chloro-1H-pyrazolo[3,4-b]pyridin-1-yl)prop-1-

enyl)piperidin-3-ol,

201) (2R,3S)-2-((E)-3-(3,5-dimethyl-1H-indazol-1-yl)prop-1-enyl)piperidin-3-ol,

202) methyl 7-bromo-1-((E)-3-((2R,3S)-3-hydroxypiperidin-2-yl)allyl)-1H-indole-3-carboxylate,

203) 7-bromo-1-((E)-3-((2R,3S)-3-hydroxypiperidin-2-yl)allyl)-1H-indole-3-carboxylic acid,

204) 5-bromo-1-((E)-3-((2R,3S)-3-hydroxypiperidin-2-yl)allyl)-1H-indole-3-carboxylic acid,

205) 4-chloro-1-((E)-3-((2R,3S)-3-hydroxypiperidin-2-yl)allyl)-1H-indole-3-carboxylic acid,

206) 6-chloro-1-((E)-3-((2R,3S)-3-hydroxypiperidin-2-yl)allyl)-1H-indole-3-carboxylic acid,

207) 7-chloro-1-((E)-3-((2R,3S)-3-hydroxypiperidin-2-yl)allyl)-1H-indole-3-carboxylic acid,

208) 6-fluoro-1-((E)-3-((2R,3S)-3-hydroxypiperidin-2-yl)allyl)-1H-indole-3-carboxylic acid,

209) 1-((E)-3-((2R,3S)-3-hydroxypiperidin-2-yl)allyl)-1H-indole-3-carboxylic acid,

210) methyl 4-chloro-1-((E)-3-((2R,3S)-3-hydroxypiperidin-2-yl)allyl)-1H-indole-3-carboxylate,

211) methyl 6-chloro-1-((E)-3-((2R,3S)-3-hydroxypiperidin-2-yl)allyl)-1H-indole-3-carboxylate,

212) methyl 7-chloro-1-((E)-3-((2R,3S)-3-hydroxypiperidin-2-yl)allyl)-1H-indole-3-carboxylate,

213) methyl 5-bromo-1-((E)-3-((2R,3S)-3-hydroxypiperidin-2-yl)allyl)-1H-indole-3-carboxylate,

214) methyl 6-bromo-1-((E)-3-((2R,3S)-3-hydroxypiperidin-2-yl)allyl)-1H-indole-3-carboxylate,

215) 5-bromo-1-((E)-3-((2R,3S)-3-hydroxypiperidin-2-yl)allyl)-N-methyl-1H-indole-3-carboxamide,

216) 5-bromo-1-((E)-3-((2R,3S)-3-hydroxypiperidin-2-yl)allyl)-N,N-dimethyl-1H-

indole-3-carboxamide,

217) (2R,3S)-2-((Z)-3-(5-chloro-4-methyl-1H-benzo[d]imidazol-1-yl)-2-fluoroprop-1-enyl)piperidin-3-ol,

218) (2R,3S)-2-((Z)-3-(5-bromo-4-methyl-1H-benzo[d]imidazol-1-yl)-2-fluoroprop-1-enyl)piperidin-3-ol,

219) (2R,3S)-2-((Z)-3-(5,6-dichloro-1H-benzo[d]imidazol-1-yl)-2-fluoroprop-1-enyl)piperidin-3-ol,

220) (2R,3S)-2-((Z)-3-(5,6-dichloro-2-(hydroxymethyl)-1H-benzo[d]imidazol-1-yl)-2-fluoroprop-1-enyl)piperidin-3-ol,

221) (2R,3S)-2-((E)-3-(5-chloro-4-methyl-1H-benzo[d]imidazol-1-yl)-2-methylprop-1-enyl)piperidin-3-ol,

222) (2R,3S)-2-((E)-3-(5-bromo-4-methyl-1H-benzo[d]imidazol-1-yl)-2-methylprop-1-enyl)piperidin-3-ol,

223) (2R,3S)-2-((E)-3-(5,6-dichloro-1H-benzo[d]imidazol-1-yl)-2-methylprop-1-enyl)piperidin-3-ol,

224) (2R,3S)-2-((E)-3-(5,6-dichloro-2-(hydroxymethyl)-1H-benzo[d]imidazol-1-yl)-2-methylprop-1-enyl)piperidin-3-ol,

225) (2R,3S)-2-(3-(5,6-dichloro-1H-benzo[d]imidazol-1-yl)prop-1-ynyl)piperidin-3-ol,

226) (2R,3S)-2-(3-(5-bromo-4-methyl-1H-benzo[d]imidazol-1-yl)prop-1-ynyl)piperidin-3-ol,

227) (2R,3S)-2-(3-(5-chloro-4-methyl-1H-benzo[d]imidazol-1-yl)prop-1-ynyl)piperidin-3-ol,

228) (2R,3S)-2-(3-(5,6-dibromo-1H-benzo[d]imidazol-1-yl)prop-1-ynyl)piperidin-3-ol,

229) (2R,3S)-2-(3-(5-fluoro-4-methyl-1H-benzo[d]imidazol-1-yl)prop-1-ynyl)piperidin-3-ol, and

230) (2R,3S)-2-((E)-3-(5,6-dichloro-1H-benzo[d]imidazol-1-yl)prop-1-enyl)pyrrolidin-3-ol.

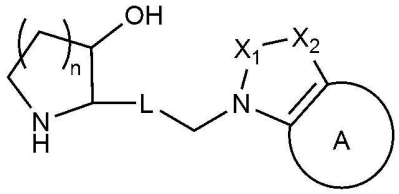
12. A pharmaceutical composition for the prevention or treatment of cancers, inflammatory diseases, autoimmune diseases or fibrosis, comprising the compound according to any one of claims 1 to 11 or a pharmaceutically acceptable salt thereof.

13. A method for preparing a compound represented by the following Chemical Formula 1 comprising the steps of:

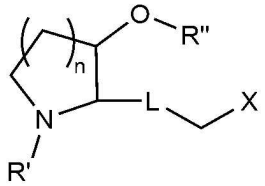
reacting a compound represented by the following Chemical Formula 1-A with a compound represented by the following Chemical Formula 1-B in the presence of a base to prepare a compound represented by the following Chemical Formula 1-C; and

reacting a compound represented by the Chemical Formula 1-C in the presence of an acid to prepare a compound represented by the following Chemical Formula 1:

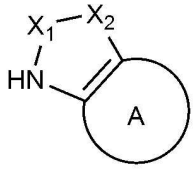
[Chemical Formula 1]



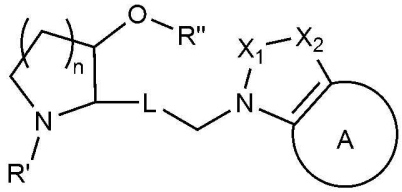
[Chemical Formula 1-A]



[Chemical Formula 1-B]



[Chemical Formula 1-C]



in Chemical Formulas 1, 1-A, 1-B, and 1-C,

n, L, X_1, X_2 and A are as defined in claim 1,

X is halogen, and

R' and R" are each independently a protecting group.

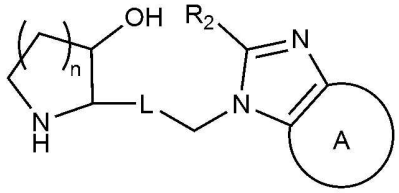
14. A method for preparing a compound represented by the following Chemical Formula 1-1 comprising the steps of:

reacting a compound represented by the following Chemical Formula 2-A with a compound represented by the following Chemical Formula 2-B in the presence of a base to prepare a compound represented by the following Chemical Formula 2-C;

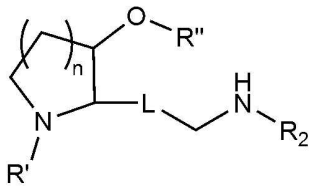
reacting an amine group and a nitro group of the compound represented by the Chemical Formula 2-C to form a ring, thereby preparing a compound represented by the following Chemical Formula 2-D; and

reacting a compound represented by the Chemical Formula 2-D in the presence of an acid to prepare a compound represented by the following Chemical Formula 1-1:

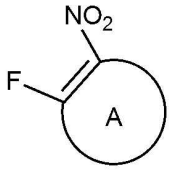
[Chemical Formula 1-1]



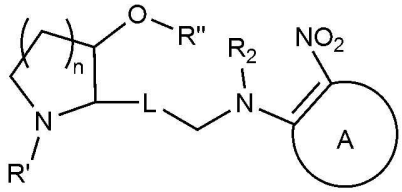
[Chemical Formula 2-A]



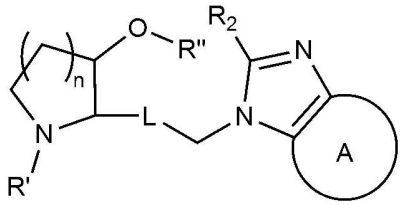
[Chemical Formula 2-B]



[Chemical Formula 2-C]



[Chemical Formula 2-D]



in Chemical Formulas 1-1, 2-A, 2-B, 2-C, and 2-D,

n, L, R_2 and A are as defined in claim 1, and

R' and R" are each independently a protecting group.

15. A method for preparing a compound represented by the following Chemical Formula 3 comprising the steps of:

reacting the compound represented by the following Chemical Formula 3-A with (carbethoxymethylene)triphenylphosphorane to prepare a compound represented by the following Chemical Formula 3-B;

hydrogenating the compound represented by the following Chemical Formula 3-B to prepare a compound represented by the following Chemical Formula 3-C;

hydrolyzing the compound represented by the Chemical Formula 3-C to prepare a compound represented by the following Chemical Formula 3-D;

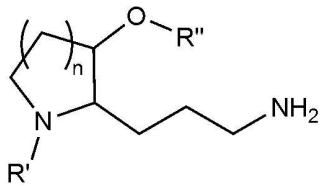
subjecting the compound represented by the Chemical Formula 3-D to a carbonyl reduction reaction to prepare a compound represented by the following Chemical Formula 3-E;

brominating the compound represented by the Chemical Formula 3-E to prepare a compound represented by the following Chemical Formula 3-F;

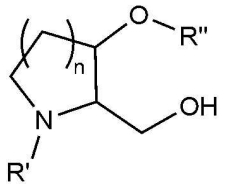
subjecting the compound represented by the Chemical Formula 3-F to an azide reaction to prepare a compound represented by the following Chemical Formula 3-G; and

aminating the compound represented by the Chemical Formula 3-G to prepare a compound represented by the following Chemical Formula 3:

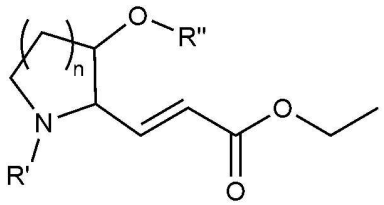
[Chemical Formula 3]



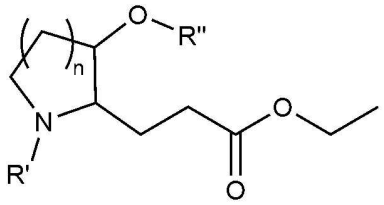
[Chemical Formula 3-A]



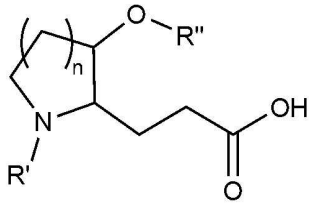
[Chemical Formula 3-B]



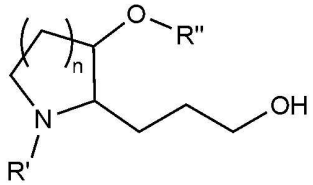
[Chemical Formula 3-C]



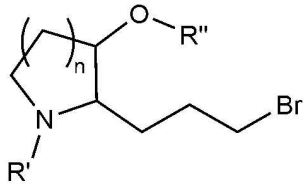
[Chemical Formula 3-D]



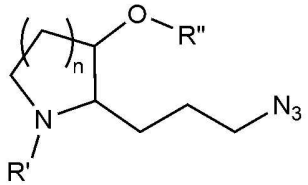
[Chemical Formula 3-E]



[Chemical Formula 3-F]



[Chemical Formula 3-G]



in Chemical Formulas 3, 3-A, 3-B, 3-C, 3-D, 3-E, 3-F, and 3-G,

n is as defined in claim 1, and

R' and R" are each independently a protecting group.