

WHAT IS CLAIMED IS:

1. A method of treating pain in a human in need thereof, comprising administering a therapeutically effective amount of Compound A to the human;
wherein Compound A is *N*-[4-(6-fluoro-3,4-dihydro-1*H*-isoquinolin-2-yl)-2,6-dimethylphenyl]-3,3-dimethylbutanamide.
2. A method of treating pain in a human in need thereof, comprising administering a therapeutically effective amount of Compound A to the human in combination with an opioid analgesic;
wherein Compound A is *N*-[4-(6-fluoro-3,4-dihydro-1*H*-isoquinolin-2-yl)-2,6-dimethylphenyl]-3,3-dimethylbutanamide.
3. A method of reducing the dose of an opioid analgesic administered to a human in need thereof, comprising administering a therapeutically effective amount of Compound A to the human, whereby the effective amount of Compound A reduces the dose of the opioid analgesic needed to achieve pain relief in the human;
wherein Compound A is *N*-[4-(6-fluoro-3,4-dihydro-1*H*-isoquinolin-2-yl)-2,6-dimethylphenyl]-3,3-dimethylbutanamide.
4. The method of claim 2 or 3, wherein the opioid analgesic is selected from buprenorphine, codeine, hydrocodone, hydromorphone, methadone, morphine, oxycodone, oxymorphone, tilidine, and tramadol, including mixtures of any of the foregoing and pharmaceutically acceptable salts of any of the foregoing.
5. The method of any one of claims 1-4, wherein the method comprises enhancing the opening of a Kv7 potassium channel in the human.
6. A method of enhancing the opening of a Kv7 potassium channel in a human, comprising administering an effective amount of Compound A to the human;
wherein Compound A is *N*-[4-(6-fluoro-3,4-dihydro-1*H*-isoquinolin-2-yl)-2,6-dimethylphenyl]-3,3-dimethylbutanamide; and
wherein the human is suffering from pain.

7. The method of claim 5 or 6, wherein the Kv7 potassium channel is one or more of Kv7.2, Kv7.3, Kv7.4, or Kv7.5.
8. The method of claim 7, wherein the method is selective for enhancing the opening of one or more of Kv7.2, Kv7.3, Kv7.4, or Kv7.5 over Kv7.1.
9. The method of claim 5 or 6, wherein the method comprises opening of the Kv7.2/Kv7.3 (KCNQ2/3) potassium channel.
10. The method of any one of claims 1-9, wherein the pain is nociceptive pain, neuropathic pain, or a combination thereof.
11. The method of claim 10, wherein the pain is nociceptive pain.
12. The method of claim 11, wherein the nociceptive pain is radicular pain, somatic pain, visceral pain, soft tissue pain, inflammatory pain, or a combination thereof.
13. The method of claim 12, wherein the nociceptive pain is inflammatory pain.
14. The method of claim 13, wherein the inflammatory pain is associated with an inflammatory disease, such as an inflammatory disease of the bowel, lung, eye, gums, kidney, skin, central nervous system, or heart.
15. The method of claim 12, wherein the nociceptive pain is visceral pain.
16. The method of claim 10, wherein the pain is neuropathic pain.
17. The method of claim 16, wherein the neuropathic pain is pain associated with spinal cord injury, spinal or brain stroke, multiple sclerosis, cancer, post-herpetic neuralgia, trigeminal neuralgia, phantom pain, causalgia, reflex sympathetic dystrophy, lower back pain, peripheral nerve trauma, herpes virus infection, diabetes mellitus, diabetic neuropathy, plexus avulsion, neuroma, limb amputation, vasculitis, chronic alcoholism, human immunodeficiency virus (HIV) infection, hypothyroidism, uremia, vitamin deficiency, pelvic pain, complex regional pain syndrome, or a combination thereof.

18. The method of any one of claims 1-17, wherein the pain is acute pain.
19. The method of any one of claims 1-17, wherein the pain is chronic pain.
20. The method of any one of claims 1-17, wherein the pain is mild, moderate, or severe pain.
21. The method of claim 20, wherein the pain is moderate or severe pain.
22. The method of claim 21, wherein the pain is cancer pain, rheumatic pain, arthritic pain, bone pain, labor pain, myocardial infarction pain, pancreatic pain, colic pain, post-operative pain, headache pain, muscle pain, pain associated with a periodontal disease (including gingivitis and periodontitis), or a combination thereof.
23. The method of any one of claims 1-9, wherein the pain is of tumor origin.
24. The method of any one of claims 1-9, wherein the pain is of non-tumor origin.
25. The method of any one of claims 1-9, wherein the pain is breakthrough pain
26. The method of any one of claims 1-9, wherein the pain is associated with a migraine, including migraine without aura ("common migraine"), migraine with aura ("classic migraine"), migraine without headache, basilar migraine, familial hemiplegic migraine, migrainous infarction, migraine with prolonged aura, or a combination thereof.
27. The method of any one of claims 1-26, wherein Compound A is orally administered to the human.
28. The method of any one of claims 1-27, wherein Compound A is administered at a dose of 2 to 200 mg to the human.
29. The method of claim 28, wherein Compound A is administered at a dose of 2 to 100 mg to the human.

30. The method of claim 28, wherein Compound A is administered at a dose of 5 to 50 mg to the human.
31. The method of claim 28, wherein Compound A is administered at a dose of 10, 20, or 25 mg to the human.
32. The method of claim 28, wherein Compound A is administered at a dose of 20 mg to the human.
33. The method of any one of claims 1-27, wherein Compound A is administered at a dose of at least 20 mg to the human.
34. The method of claim 33, wherein Compound A is administered at a dose of at least 50 mg to the human.
35. The method of claim 33, wherein Compound A is administered at a dose of at least 100 mg to the human.
36. The method of any one of claims 1-27, wherein Compound A is administered at a dose of 5-1000 mg per day to the human.
37. The method of claim 36, wherein Compound A is administered at a dose of 5-500 mg per day to the human.
38. The method of claim 36, wherein Compound A is administered at a dose of 5-250 mg per day to the human.
39. The method of claim 36, wherein Compound A is administered at a dose of 20-150 mg per day to the human.
40. The method of claim 36, wherein Compound A is administered at a dose of 100 mg per day to the human.
41. The method of any one of claims 1-40, wherein Compound A is administered at a dose of 0.05-20 mg/kg to the human.

42. The method of claim 41, wherein Compound A is administered at a dose of 0.1-10 mg/kg to the human.
43. The method of any one of claims 11-15, wherein Compound A is orally administered at a dose of 0.05-5 mg/kg to the human.
44. The method of any one of claims 11-15, wherein Compound A is orally administered at a dose of 0.1-2 mg/kg to the human.
45. The method of claim 16 or 17, wherein Compound A is administered at a dose of 0.5-10 mg/kg to the human.
46. The method of claim 16 or 17, wherein Compound A is orally administered at a dose of 1-8 mg/kg to the human.
47. The method of any one of claims 1-46, wherein Compound A is orally administered to the human from between about 30 minutes before to about 2 hours after eating a meal.
48. The method of claim 47, wherein Compound A is orally administered to the human during a meal or within 15 minutes after eating a meal.
49. Use of Compound A in the manufacture of a medicament for treating pain in a human in need thereof;
wherein Compound A is *N*-[4-(6-fluoro-3,4-dihydro-1*H*-isoquinolin-2-yl)-2,6-dimethylphenyl]-3,3-dimethylbutanamide.
50. Use of Compound A in combination with an opioid analgesic in the manufacture of a medicament for treating pain in a human in need thereof;
wherein Compound A is *N*-[4-(6-fluoro-3,4-dihydro-1*H*-isoquinolin-2-yl)-2,6-dimethylphenyl]-3,3-dimethylbutanamide.
51. Use of Compound A in the manufacture of a medicament for reducing the dose of an opioid analgesic administered to a human in need thereof;
wherein Compound A is *N*-[4-(6-fluoro-3,4-dihydro-1*H*-isoquinolin-2-yl)-2,6-dimethylphenyl]-3,3-dimethylbutanamide.

52. The use of claim 50 or 51, wherein the opioid analgesic is selected from buprenorphine, codeine, hydrocodone, hydromorphone, methadone, morphine, oxycodone, oxymorphone, tilidine, and tramadol, including mixtures of any of the foregoing and pharmaceutically acceptable salts of any of the foregoing.
53. The use of any one of claims 49-52, wherein the use comprises enhancing the opening of a Kv7 potassium channel in the human.
54. Use of Compound A in the manufacture of a medicament for enhancing the opening of a Kv7 potassium channel in a human;
wherein Compound A is *N*-[4-(6-fluoro-3,4-dihydro-1*H*-isoquinolin-2-yl)-2,6-dimethylphenyl]-3,3-dimethylbutanamide; and
wherein the human is suffering from pain.
55. The use of claim 53 or 54, wherein the Kv7 potassium channel is one or more of Kv7.2, Kv7.3, Kv7.4, or Kv7.5.
56. The use of claim 55, wherein enhancing the opening of a Kv7 potassium channel is selective for enhancing the opening of one or more of Kv7.2, Kv7.3, Kv7.4, or Kv7.5 over Kv7.1.
57. The use of claim 53 or 54, wherein enhancing the opening of a Kv7 potassium channel comprises opening of the Kv7.2/Kv7.3 (KCNQ2/3) potassium channel.
58. The use of any one of claims 49-57, wherein the pain is nociceptive pain, neuropathic pain, or a combination thereof.
59. The use of claim 58, wherein the pain is nociceptive pain.
60. The use of claim 59, wherein the nociceptive pain is radicular pain, somatic pain, visceral pain, soft tissue pain, inflammatory pain, or a combination thereof.
61. The use of claim 60, wherein the nociceptive pain is inflammatory pain.

62. The use of claim 61, wherein the inflammatory pain is associated with an inflammatory disease, such as an inflammatory disease of the bowel, lung, eye, gums, kidney, skin, central nervous system, or heart.
63. The use of claim 60, wherein the nociceptive pain is visceral pain.
64. The use of claim 58, wherein the pain is neuropathic pain.
65. The use of claim 64, wherein the neuropathic pain is pain associated with spinal cord injury, spinal or brain stroke, multiple sclerosis, cancer, post-herpetic neuralgia, trigeminal neuralgia, phantom pain, causalgia, reflex sympathetic dystrophy, lower back pain, peripheral nerve trauma, herpes virus infection, diabetes mellitus, diabetic neuropathy, plexus avulsion, neuroma, limb amputation, vasculitis, chronic alcoholism, human immunodeficiency virus (HIV) infection, hypothyroidism, uremia, vitamin deficiency, pelvic pain, complex regional pain syndrome, or a combination thereof.
66. The use of any one of claims 49-65, wherein the pain is acute pain.
67. The use of any one of claims 49-65, wherein the pain is chronic pain.
68. The use of any one of claims 49-65, wherein the pain is mild, moderate, or severe pain.
69. The use of claim 68, wherein the pain is moderate or severe pain.
70. The use of claim 69, wherein the pain is cancer pain, rheumatic pain, arthritic pain, bone pain, labor pain, myocardial infarction pain, pancreatic pain, colic pain, post-operative pain, headache pain, muscle pain, pain associated with a periodontal disease (including gingivitis and periodontitis), or a combination thereof.
71. The use of any one of claims 49-57, wherein the pain is of tumor origin.
72. The use of any one of claims 49-57, wherein the pain is of non-tumor origin.
73. The use of any one of claims 49-57, wherein the pain is breakthrough pain

74. The use of any one of claims 49-57, wherein the pain is associated with a migraine, including migraine without aura ("common migraine"), migraine with aura ("classic migraine"), migraine without headache, basilar migraine, familial hemiplegic migraine, migrainous infarction, migraine with prolonged aura, or a combination thereof.
75. The use of any one of claims 49-74, wherein Compound A is orally administered to the human.
76. The use of any one of claims 49-75, wherein Compound A is administered at a dose of 2 to 200 mg to the human.
77. The use of claim 76, wherein Compound A is administered at a dose of 2 to 100 mg to the human.
78. The use of claim 76, wherein Compound A is administered at a dose of 5 to 50 mg to the human.
79. The use of claim 76, wherein Compound A is administered at a dose of 10, 20, or 25 mg to the human.
80. The use of claim 76, wherein Compound A is administered at a dose of 20 mg to the human.
81. The use of any one of claims 49-75, wherein Compound A is administered at a dose of at least 20 mg to the human.
82. The use of claim 81, wherein Compound A is administered at a dose of at least 50 mg to the human.
83. The use of claim 81, wherein Compound A is administered at a dose of at least 100 mg to the human.
84. The use of any one of claims 49-75, wherein Compound A is administered at a dose of 5-1000 mg per day to the human.

85. The use of claim 84, wherein Compound A is administered at a dose of 5-500 mg per day to the human.
86. The use of claim 84, wherein Compound A is administered at a dose of 5-250 mg per day to the human.
87. The use of claim 84, wherein Compound A is administered at a dose of 20-150 mg per day to the human.
88. The use of claim 84, wherein Compound A is administered at a dose of 100 mg per day to the human.
89. The use of any one of claims 49-88, wherein Compound A is administered at a dose of 0.05-20 mg/kg to the human.
90. The use of claim 89, wherein Compound A is administered at a dose of 0.1-10 mg/kg to the human.
91. The use of any one of claims 59-63, wherein Compound A is orally administered at a dose of 0.05-5 mg/kg to the human.
92. The use of any one of claims 59-63, wherein Compound A is orally administered at a dose of 0.1-2 mg/kg to the human.
93. The use of claim 64 or 65, wherein Compound A is administered at a dose of 0.5-10 mg/kg to the human.
94. The use of claim 64 or 65, wherein Compound A is orally administered at a dose of 1-8 mg/kg to the human.
95. The use of any one of claims 49-94, wherein Compound A is orally administered to the human from between about 30 minutes before to about 2 hours after eating a meal.
96. The use of claim 95, wherein Compound A is orally administered to the human during a meal or within 15 minutes after eating a meal.