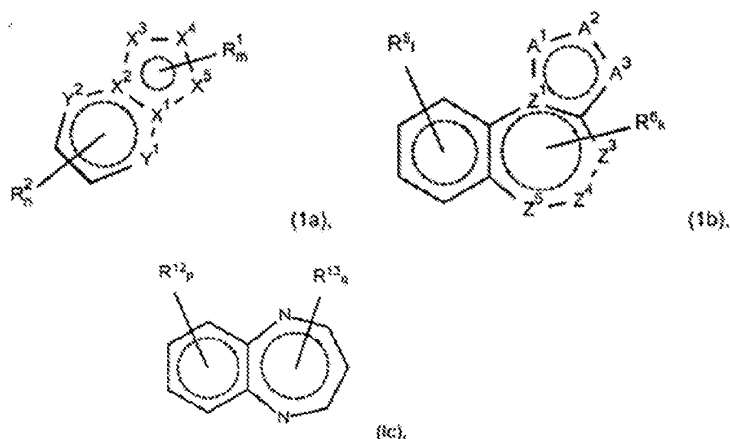


CLAIMS

WHAT IS CLAIMED IS:

1. A method of treating an epileptic condition in a subject, comprising administering to the subject a therapeutically effective amount of a compound of a general formula (1a), general formula (1b) or general formula (1c),



wherein

X^1 , X^2 , X^3 , X^4 and X^5 are independently -C, -N, -S or -O wherein at least two of X^1 , X^2 , X^3 , X^4 and X^5 are -N,

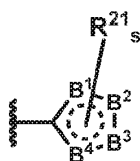
Y^1 and Y^2 are independently -C or -N,

m of R^1_m is 1, wherein R^1 is an unsubstituted phenyl, a phenyl substituted with C_1 - C_4 alkyl, F, Cl, Br, I, -CN, a substituted or unsubstituted biphenyl or $-(C=O)-R^3$, wherein R^3 is a substituted or unsubstituted aryl or 5- to 6-membered heteroaryl,

n of R^2_n is 1 or 2, wherein each R^2 is independently a substituted or unsubstituted C_3 - C_8 cycloalkyl, a substituted or unsubstituted C_1 - C_6 alkyl, a substituted or unsubstituted C_1 - C_6 alcohol, a substituted or unsubstituted 6-membered heteroaryl, a halogen, or $-O-CH_2-R^4$, wherein R^4 is a substituted or unsubstituted 5- or 6-membered heteroaryl,

Z^1 , Z^3 , Z^4 , and Z^5 are independently -C, -N, -S or -O,

A^1 , and A^2 and A^3 , are independently -C, -N, or $-(C=O)-O-R^7$, or



wherein

R^7 is alkyl,

B^1 , B^2 , B^3 , and B^4 are independently -C, -N, or -O,

s of R^{21s} is 1, 2, 3 or 4, and

l of R^{5l} is 1 or 2, wherein each R^5 is independently a C_1 - C_4 alkynyl or a halogen,

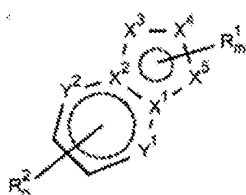
k of R^{6k} is 1, 2, 3 or 4, wherein each R^6 is independently a substituted or unsubstituted aryl, a substituted or unsubstituted heteroaryl, a substituted or unsubstituted C_1 - C_3 alkyl, or hydrogen,

p of R^{12p} is 1 or 2, wherein each R^{12} is independently a substituted or unsubstituted C_1 - C_4 alkyl, I, Br, Cl or F, and

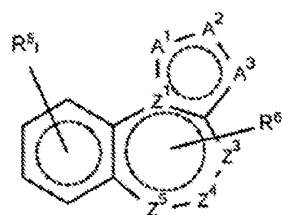
q of R^{13q} is 1, 2, 3 or 4, wherein each R^{13} is independently a substituted or unsubstituted aryl, a substituted or unsubstituted heteroaryl, a substituted or unsubstituted C_1 - C_3 alkyl, oxygen or hydrogen,

to treat the epileptic condition in the subject.

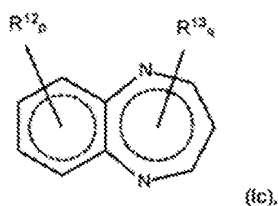
2. A method of treating epilepsy associated with a mutation in a sodium channel in a subject comprising administering to the subject a compound of a general formula (1a), general formula (1b) or general formula (1c),



(1a).



(1b).



wherein

X^1 , X^2 , X^3 , X^4 and X^5 are independently $-C$, $-N$, $-S$ or $-O$ wherein at least two of X^1 , X^2 , X^3 , X^4 and X^5 are $-N$,

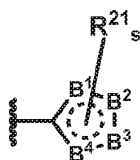
Y^1 and Y^2 are independently $-C$ or $-N$,

m of R^1_m is 1, wherein R^1 is an unsubstituted phenyl, a phenyl substituted with C_1 - C_4 -alkyl, F , Cl , Br , I , $-CN$, a substituted or unsubstituted biphenyl or $-(C=O)-R^3$, wherein R^3 is a substituted or unsubstituted aryl or 5- to 6-membered heteroaryl,

n of R^2_n is 1 or 2, wherein each R^2 is independently a substituted or unsubstituted C_3 - C_8 cycloalkyl, a substituted or unsubstituted C_1 - C_6 alkyl, a substituted or unsubstituted C_1 - C_6 alcohol, a substituted or unsubstituted 6-membered heteroaryl, a halogen, or $-O-CH_2-R^4$, wherein R^4 is a substituted or unsubstituted 5- or 6-membered heteroaryl,

Z^1 , Z^3 , Z^4 , and Z^5 are independently $-C$, $-N$, $-S$ or $-O$,

– A^1 , and A^2 and A^3 , are independently $-C$, $-N$, or $-(C=O)-O-R^7$, or



wherein

R^7 is alkyl,

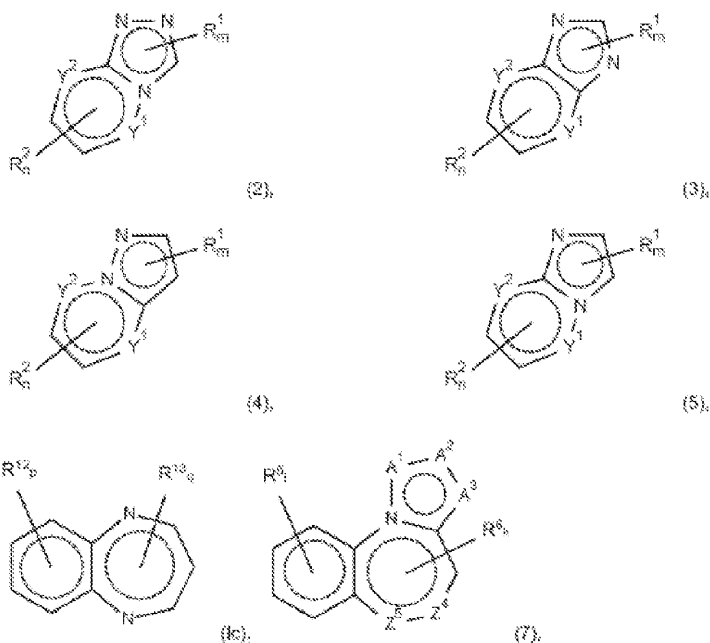
B^1 , B^2 , B^3 , and B^4 are independently $-C$, $-N$, or $-O$,

s of R^{21}_s is 1, 2, 3 or 4, and

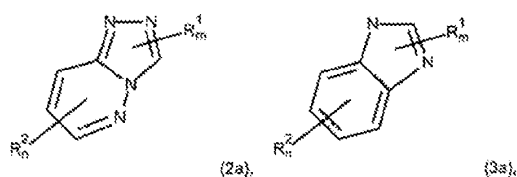
l of R^5_l is 1 or 2, wherein each R^5 is independently a C_1 - C_4 alkynyl or a halogen,

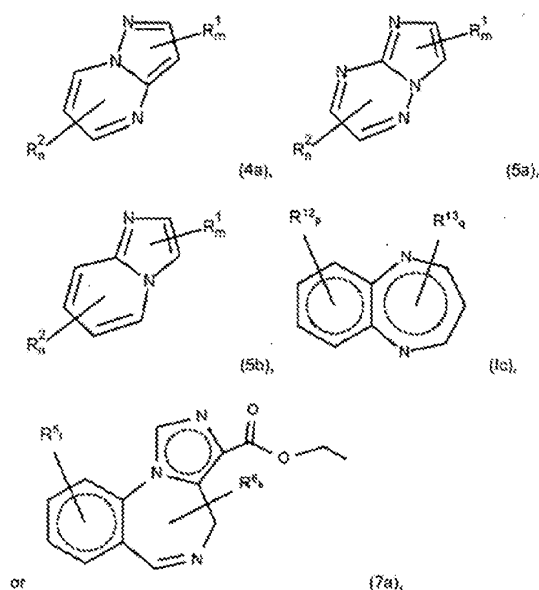
k of R^6_k is 1, 2, 3 or 4, wherein each R^6 is independently a substituted or unsubstituted aryl, a substituted or unsubstituted heteroaryl, a substituted or unsubstituted C_1 - C_3 alkyl, or hydrogen,

- p of R^{12}_p is 1 or 2, wherein each R^{12} is independently a substituted or unsubstituted C_1 - C_4 alkyl, I, Br, Cl or F, and
- q of R^{13}_q is 1, 2, 3 or 4, wherein each R^{13} is independently a substituted or unsubstituted aryl, a substituted or unsubstituted heteroaryl, a substituted or unsubstituted C_1 - C_3 alkyl, oxygen or hydrogen,
- to treat the epilepsy associated with the mutation in the sodium channel.
3. The method of claim 1 or 2, wherein the compound is of a general formula (2), (3), (4), (5), (1c) or (7),

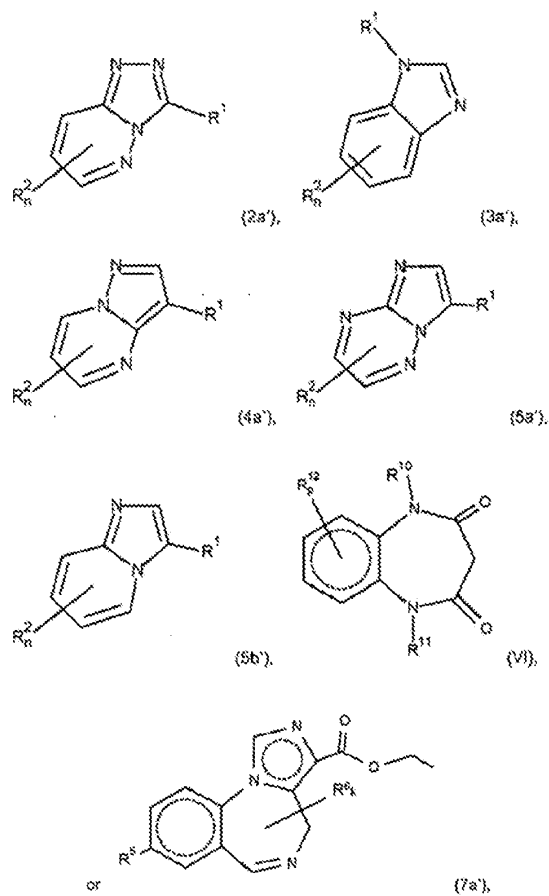


4. The method of any one of claims 1-3, wherein the compound is of the general formula (2a), (3a), (4a), (5a), (5b), (1c) or (7a)





5. The method of any one of claims 1-4, wherein
 m of R_m^1 is 1, and wherein R^1 is:
 an unsubstituted phenyl,
 a substituted phenyl comprising C_1 - C_4 -alkyl, F, Cl, Br, I, -CN as
 substituents,
 an unsubstituted biphenyl,
 a substituted biphenyl comprising at least one -CN as a substituent,
 a substituted biphenyl comprising at least one -CN as a substituent, or
 $-(C=O)-R^3$, wherein R^3 is pyridine.
6. The method of any one of claims 1-5, wherein the compound is of the general
 formula (2a'), (3a'), (4a'), (5a'), (5b'), (VI) or (7a'),



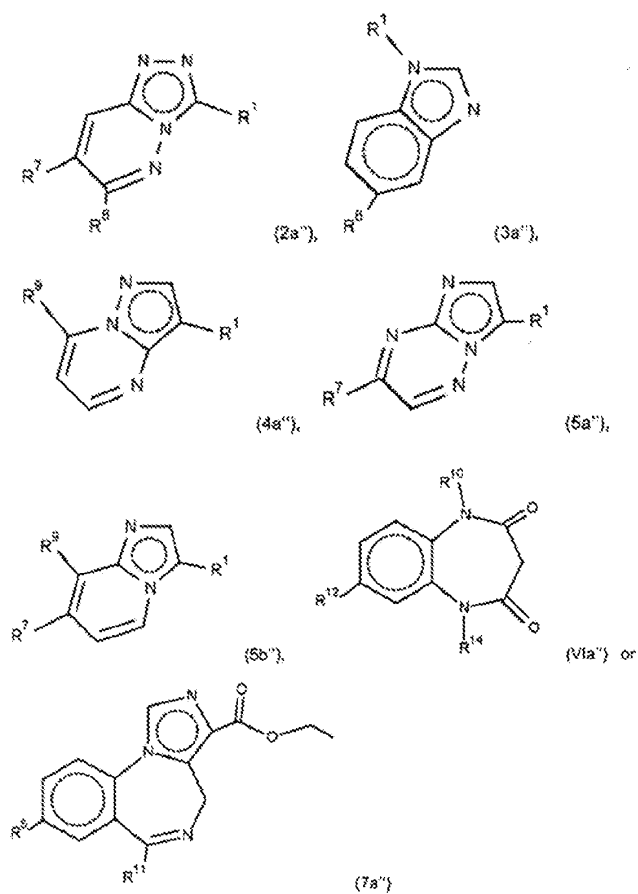
wherein

R¹⁰ is a substituted or unsubstituted aryl, a substituted or unsubstituted C₁-C₃ alkyl or hydrogen,

R₁₁ is a substituted or unsubstituted aryl, a substituted or unsubstituted C₁-C₃ alkyl, or hydrogen, and

p of R_p¹² is 1 and R¹² is I, Br, Cl or F.

7. The method of any one of claims 1-6, wherein the compound is of the general formula (2a"), (3a"), (4a"), (5a"), (5b"), (VIa") or (7a"),



wherein R⁷ is:

- an unsubstituted C₁-C₆ alkyl,
- an unsubstituted C₃-C₈ cycloalkyl,
- an unsubstituted C₁-C₆ alcohol,

R⁸ is:

- O-CH₂-R⁴, wherein R⁴ is a substituted or unsubstituted 5-membered heteroaryl, or
- an unsubstituted C₁-C₆ alcohol,

R⁹ is:

- an unsubstituted C₆ heteroaryl, or
- a halogen, or
- R⁹ is an unsubstituted 6-membered heteroaryl in formula (4a'') or a halogen in formula (5b''),

R¹⁰ is a C₁-C₃ alkyl or hydrogen,

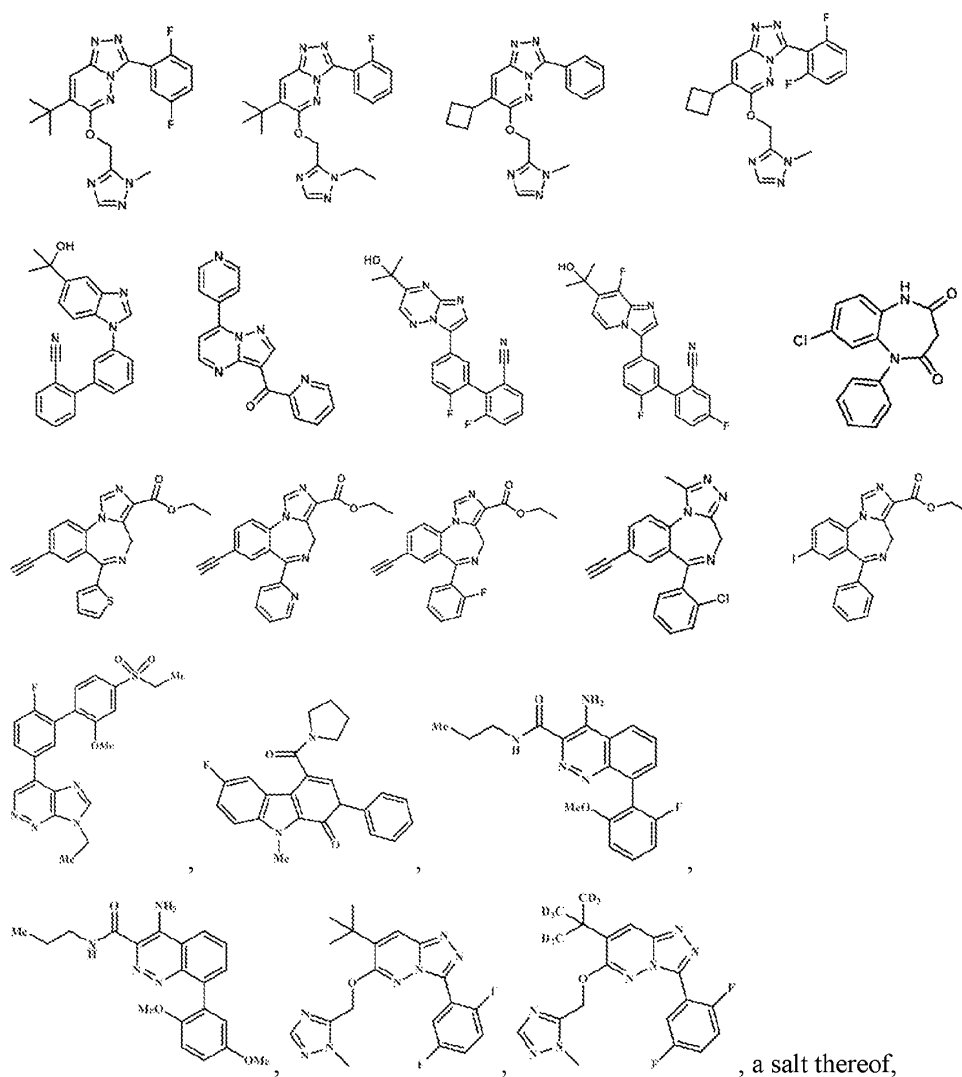
R¹¹ is a substituted or unsubstituted aryl or heteroaryl,

R¹⁴ is a substituted or unsubstituted aryl or heteroaryl,

R¹² is I, Cl, Br or F, or

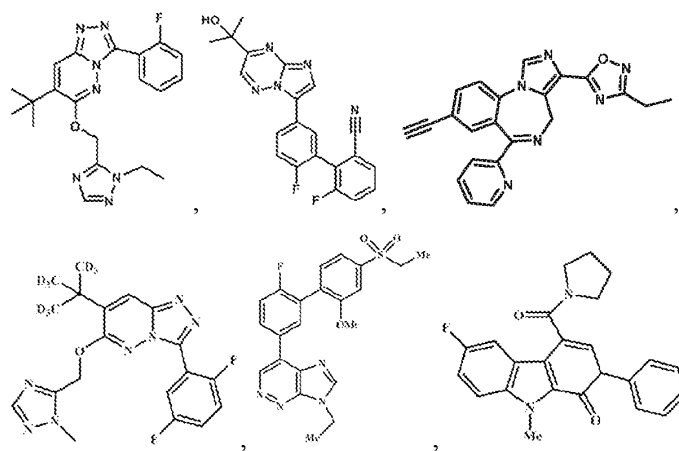
R⁵ is C₂ alkynyl or I.

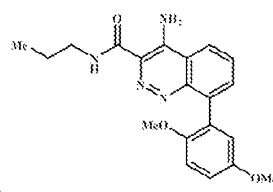
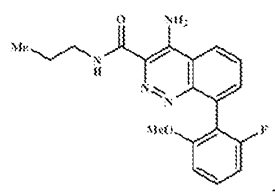
8. The method of any one of claims 1-7, wherein the compound is an α 1, α 2, α 3, or α 5 GABA_A receptor modulator.
9. The method of claim 8, wherein the compound is a positive, allosteric α 2 or α 3 GABA_A receptor modulator.
10. The method of any one of claims 1-9, wherein the subject is a human.
11. The method of any one of claims 1-9, wherein the subject is a dog.
12. The method of any one of claims 1-9, wherein the subject is aged 0-17 years old.
13. The method of any one of claims 1-9, wherein the subject is aged 18-130 years old.
14. The method of any one of claims 1-13, wherein the therapeutically effective amount of the compound is present in a pharmaceutical composition that comprises a pharmaceutically acceptable excipient, diluent, or carrier.
15. The method of claim 1, wherein the epileptic condition is selected from the group consisting of: Benign centrottemporal lobe epilepsy of childhood, Benign occipital epilepsy of childhood (BOEC), Autosomal dominant nocturnal frontal lobe epilepsy (ADNFLE), Primary reading epilepsy, Childhood absence epilepsy (CEA), Juvenile absence epilepsy, Juvenile myoclonic epilepsy (JME), Symptomatic localization-related epilepsies, Temporal lobe epilepsy (TLE), Frontal lobe epilepsy, Rasmussen's encephalitis, West syndrome, Dravet syndrome, Progressive myoclonic epilepsies, and Lennox-Gastaut syndrome (LGS).
16. The method of claim 2, wherein the mutation in the sodium channel comprises a mutation in a sodium voltage-gated channel alpha subunit 1 (SCN1A) gene.
17. A method of treating Dravet Syndrome in a subject comprising administering to a subject an amount of a pharmaceutical composition comprising a compound selected from the group consisting of:



and a polymorph thereof, to treat the Dravet Syndrome in the subject.

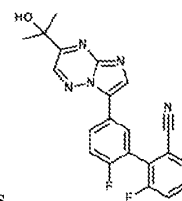
18. The method of claim 17, wherein the compound is:

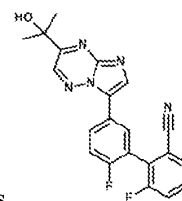




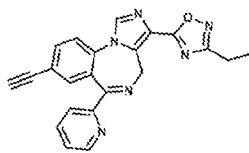
, a salt thereof, or a polymorph thereof.

19. The method of claim 17, wherein the amount is effective to treat the Dravet Syndrome when administered at a dose of from about 0.003 mg/kg per day to about 10 mg/kg per day of a body weight of the subject when administered to the subject.
20. The method of claim 17, wherein the subject is a human.
21. The method of claim 17, wherein the subject is a dog.
22. The method of claim 17, wherein the pharmaceutical composition further comprises a pharmaceutically acceptable excipient, diluent, or carrier.
23. The method of claim 22, comprising the carrier, wherein the carrier is methyl cellulose.

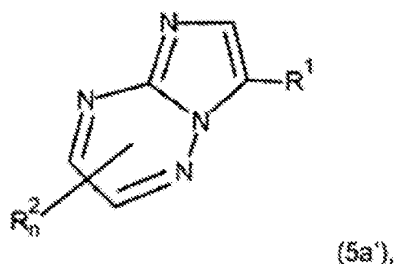


24. The method of claim 17, wherein the compound is , a polymorph thereof, or a salt thereof.
25. The method of claim 24, comprising the salt, wherein the salt is a phosphate salt.
26. The method of claim 24, comprising the salt, wherein the salt is a sulfate salt.
27. The method of any one of claims 24-26, comprising the polymorph, wherein the polymorph has an X-ray powder diffraction (XRPD) having characteristic peak locations of at least three of the values selected from the group consisting of: about 6.4, 7.5, 10.2, 12.7, 13.3, 14.5, 16.0, 17.1, 17.4, 17.9, 18.5, 19.1, 19.7, 20.3, 20.9, 21.5, 22.6, 23.7, 26.2, 26.7, 26.9, 27.5, 28.4, 30.2, and 32.1 ± 0.2 degrees, 2-Theta, when measured using: (a) an X-ray wavelength parameter of Cu: K- Alpha ($\lambda=1.54179\text{\AA}$); (b) an X-Ray tube voltage setting of 40 kV and current of 40 mA; (c) a scan scope of from about 3 degrees to about 40 degrees; (d) a sample rotation speed of about 15 rpm; and (e) a scanning rate of 10 degrees per minute.
28. The method of claim 17, wherein the administering comprises an oral administration.
29. The method of claim 17, wherein the administering is performed at least once a day.

30. The method of any one of claims 17-29, wherein the administering of the amount that is effective to treat Dravet Syndrome does not produce drowsiness or sedation in the subject.
31. A method of treating an epileptic condition in a subject comprising administering to the subject an amount of a compound of formula:



- a pharmaceutically acceptable salt, or polymorph thereof, to treat the epileptic condition in the subject, wherein the amount comprises a dose of from about 0.003 mg/kg to about 10 mg/kg body weight of the subject.
32. The method of claim 31, wherein the administering reduces an amount of seizures to an amount that is at least 20% less than an amount of seizures that occurs based on an administering of an equivalent dose of clobazam.
33. The method of claim 31, wherein the amount comprises a dose of from about 0.08 mg/kg to about 2.5 mg/kg body weight of the subject.
34. The method of claim 31, wherein the compound is present in a shelf stable formulation.
35. The method of claim 31, wherein the compound is formulated as a non-drowsy formulation.
36. The method of claim 35, wherein the non-drowsy formulation comprises caffeine.
37. The method of claim 31, wherein the compound, the pharmaceutically acceptable salt, or polymorph thereof, is a phosphate salt or polymorph thereof.
38. The method of claim 31, wherein the compound, the pharmaceutically acceptable salt, or polymorph thereof, is a sulfate salt or polymorph thereof.
39. A method of treating an epileptic condition in a subject, comprising administering to the subject a pharmaceutical composition that comprises a compound of the general formula (5a') or a salt or polymorph thereof,



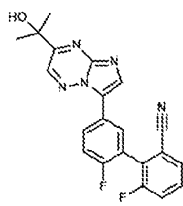
wherein

R^1 is an unsubstituted phenyl, a phenyl substituted with C_1 - C_4 -alkyl, F, Cl, Br, I, $-CN$, a substituted or unsubstituted biphenyl, or $-(C=O)-R^3$, wherein R^3 is a substituted or unsubstituted aryl or 5- to 6-membered heteroaryl, and

n of R_n^2 is 1 or 2, wherein each R^2 is independently a substituted or unsubstituted C_3 - C_8 cycloalkyl, a substituted or unsubstituted C_1 - C_6 alkyl, a substituted or unsubstituted C_1 - C_6 alcohol, a substituted or unsubstituted 6-membered heteroaryl, a halogen, or $-O-CH_2-R^4$, wherein R^4 is a substituted or unsubstituted 5- or 6-membered heteroaryl,

wherein the administering is in an amount effective to treat the epileptic condition in the subject, and wherein the amount comprises a dose of the compound or a salt or polymorph thereof of from about 0.003 mg to about 1 mg per kg of a body weight of the subject per day.

40. A method of treating an epileptic condition in a subject, comprising administering to the subject a pharmaceutical composition that comprises a compound having a structure of



, or a salt or polymorph thereof, wherein the administering is in an amount effective to treat the epileptic condition in the subject, and wherein the amount comprises a dose of the compound or a salt or polymorph thereof of from about 0.0003 mg to about 1 mg per kg of a body weight of the subject per day.

41. The method of claim 39 or 40, wherein the compound, or the salt or polymorph thereof, is a phosphate salt or polymorph thereof.

42. The method of claim 39 or 40, wherein the compound, or the salt or polymorph thereof, is a sulfate salt or polymorph thereof.
43. The method of claim 40, wherein the compound, or a salt or polymorph thereof, is a phosphate polymorph, and wherein the phosphate polymorph exhibits an X-ray powder diffraction (XRPD) pattern having characteristic peak locations of at least three of the values selected from the group consisting of: about 6.4, 7.5, 10.2, 12.7, 13.3, 14.5, 16.0, 17.1, 17.4, 17.9, 18.5, 19.1, 19.7, 20.3, 20.9, 21.5, 22.6, 23.7, 26.2, 26.7, 26.9, 27.5, 28.4, 30.2, and 32.1 ± 0.2 degrees, 2-theta, when measured using: (a) an X-ray wavelength parameter of Cu: K- Alpha ($\lambda=1.54179\text{\AA}$); (b) an X-Ray tube voltage setting of 40 kV and current of 40 mA; (c) a scan scope of from about 3 degrees to about 40 degrees; (d) a sample rotation speed of about 15 rpm; and (e) a scanning rate of 10 degrees per minute.
44. The method of claim 39 or 40, wherein the pharmaceutical composition is formulated for oral or transdermal administration.
45. The method of claim 39 or 40, wherein the amount comprises a dose of the compound or a salt or polymorph thereof of less than 0.3 mg per kg of the body weight of the subject per day.
46. The method of claim 39 or 40, wherein the amount comprises a dose of the compound or a salt or polymorph thereof of less than 0.1 mg per kg of the body weight of the subject per day.
47. The method of claim 39 or 40, wherein the amount comprises a dose of the compound or a salt or polymorph thereof of less than 0.03 mg per kg of the body weight of the subject per day.
48. The method of claim 39 or 40, wherein the epileptic condition is Dravet syndrome.
49. The method of claim 39 or 40, wherein the epileptic condition is a focal seizure.
50. The method of claim 39 or 40, wherein the epileptic condition is a general epilepsy or a genetic epilepsy.
51. The method of claim 39 or 40, wherein the compound, or a salt or polymorph thereof, is not a phosphate salt or polymorph thereof, and is not a sulfate salt or polymorph thereof.
52. The method of claim 39 or 40, wherein the compound is formulated as a non-drowsy formulation.
53. The method of claim 52, wherein the non-drowsy formulation comprises caffeine.
54. The method of claim 39 or 40, wherein the epileptic condition is selected from the group consisting of: Benign centrotemporal lobe epilepsy of childhood, Benign

occipital epilepsy of childhood (BOEC), Autosomal dominant nocturnal frontal lobe epilepsy (ADNFLE), Primary reading epilepsy, Childhood absence epilepsy (CEA), Juvenile absence epilepsy, Juvenile myoclonic epilepsy (JME), Symptomatic localization-related epilepsies, Temporal lobe epilepsy (TLE), Frontal lobe epilepsy, Rasmussen's encephalitis, Cerebral palsy, Cerebral hypoxia, Down's syndrome, hypoxic-ischemic encephalopathy (HIE), West syndrome, Dravet syndrome, focal seizures, Progressive myoclonic epilepsies, or Lennox-Gastaut syndrome (LGS).

55. The method of claim 39 or 40, wherein the subject is a human.