

CLAIMS

We claim:

1. A crystalline form of 2-(2-((4-(((1,1,1,3,3,3-hexafluoropropan-2-yl)oxy)carbonyl)piperazin-1-yl)methyl)-5-(trifluoromethyl)phenoxy)-2-methylpropanoic acid, or a pharmaceutically acceptable salt thereof.
2. The crystalline form according to claim 1, wherein the crystalline form is 2-(2-((4-(((1,1,1,3,3,3-hexafluoropropan-2-yl)oxy)carbonyl)piperazin-1-yl)methyl)-5-(trifluoromethyl)phenoxy)-2-methylpropanoic acid form A having a crystal form characterized by an XRPD obtained using CuK α 1 radiation ($\lambda=1.5406 \text{ \AA}$) showing peaks at the following 2θ -angles: 10.36, 16.45, 16.71, 19.66, 21.85, and 24.93°.
3. The crystalline form according to claim 1, wherein the crystalline form is 2-(2-((4-(((1,1,1,3,3,3-hexafluoropropan-2-yl)oxy)carbonyl)piperazin-1-yl)methyl)-5-(trifluoromethyl)phenoxy)-2-methylpropanoic acid form C having a crystal form characterized by an XRPD obtained using CuK α 1 radiation ($\lambda=1.5406 \text{ \AA}$) showing peaks at the following 2θ -angles: 5.75, 11.08, 12.50, 15.21, 17.58, and 20.06°.
4. The crystalline form according to claim 1, wherein the crystalline form is 2-(2-((4-(((1,1,1,3,3,3-hexafluoropropan-2-yl)oxy)carbonyl)piperazin-1-yl)methyl)-5-(trifluoromethyl)phenoxy)-2-methylpropanoic acid form D having a crystal form characterized by an XRPD obtained using CuK α 1 radiation ($\lambda=1.5406 \text{ \AA}$) showing peaks at the following 2θ -angles: 6.12, 12.26, 12.44, 13.42, 18.46, and 19.26°.
5. The crystalline form according to claim 1, wherein the crystalline form is 2-(2-((4-(((1,1,1,3,3,3-hexafluoropropan-2-yl)oxy)carbonyl)piperazin-1-yl)methyl)-5-(trifluoromethyl)phenoxy)-2-methylpropanoic acid form E having a crystal form characterized by an XRPD obtained using CuK α 1 radiation ($\lambda=1.5406 \text{ \AA}$) showing peaks at the following 2θ -angles: 10.25, 15.41, 16.29, 16.55, 19.56, and 24.72°.

6. The crystalline form according to claim 1, wherein the crystalline form is 2-(2-((4-(((1,1,1,3,3,3-hexafluoropropan-2-yl)oxy)carbonyl)piperazin-1-yl)methyl)-5-(trifluoromethyl)phenoxy)-2-methylpropanoic acid hydrate having a crystal form characterized by an XRPD obtained using CuK α 1 radiation ($\lambda=1.5406$ Å) showing peaks at the following 2 θ -angles: 8.84, 14.74, 15.95, 17.42, 20.70, and 22.71°.
7. The crystalline form according to 1, wherein the crystalline form is 2-(2-((4-(((1,1,1,3,3,3-hexafluoropropan-2-yl)oxy)carbonyl)piperazin-1-yl)methyl)-5-(trifluoromethyl)phenoxy)-2-methylpropanoic acid sodium salt monohydrate form having a crystal form characterized by an XRPD obtained using CuK α 1 radiation ($\lambda=1.5406$ Å) showing peaks at the following 2 θ -angles: 7.13, 9.03, 12.16, 18.09, 18.47, and 18.89°.
8. A pharmaceutical composition comprising a crystalline form of 2-(2-((4-(((1,1,1,3,3,3-hexafluoropropan-2-yl)oxy)carbonyl)piperazin-1-yl)methyl)-5-(trifluoromethyl)phenoxy)-2-methylpropanoic acid, or a pharmaceutically acceptable salt, according to any of claims 1 to 7 and one or more pharmaceutically acceptable carriers or diluents.
9. The crystalline form of 2-(2-((4-(((1,1,1,3,3,3-hexafluoropropan-2-yl)oxy)carbonyl)piperazin-1-yl)methyl)-5-(trifluoromethyl)phenoxy)-2-methylpropanoic acid, or a pharmaceutically acceptable salt thereof according to any of claims 1 to 7, for use as a medicament.
10. The crystalline form of 2-(2-((4-(((1,1,1,3,3,3-hexafluoropropan-2-yl)oxy)carbonyl)piperazin-1-yl)methyl)-5-(trifluoromethyl)phenoxy)-2-methylpropanoic acid according to any of claims 1 to 7, or a pharmaceutically acceptable salt, for use in the treatment of a disease or a disorder selected from pain, epilepsy/seizure disorder, Alzheimer's disease, Huntington's chorea, Huntington's disease, multiple sclerosis, obsessive-compulsive disorder, Parkinson's disease, depression, post-traumatic stress disorder, generalized anxiety disorder, persistent motor tic disorder, persistent vocal tic disorder, and dystonia.
11. The crystalline form of 2-(2-((4-(((1,1,1,3,3,3-hexafluoropropan-2-yl)oxy)carbonyl)piperazin-1-yl)methyl)-5-(trifluoromethyl)phenoxy)-2-methylpropanoic acid according to any of claims 1 to 7, or pharmaceutically acceptable salt thereof for use in the treatment of pain, wherein the

pain is selected from the list consisting of acute pain, inflammatory pain, cancer pain, chronic pain, pain caused by peripheral neuropathy, central pain, complex regional pain syndrome, fibromyalgia, migraine, vasoocclusive painful crises in sickle cell disease, spasticity or pain associated with multiple sclerosis, abdominal pain associated with irritable bowel syndrome functional chest pain, rheumatoid arthritis, osteoarthritis, somatoform disorders, or functional dyspepsia.

12. The crystalline form of 2-(2-((4-(((1,1,1,3,3,3-hexafluoropropan-2-yl)oxy)carbonyl)piperazin-1-yl)methyl)-5-(trifluoromethyl)phenoxy)-2-methylpropanoic acid according to any of claims 1 to 7, or pharmaceutically acceptable salt thereof for use in the treatment of central pain.

13. The crystalline form of 2-(2-((4-(((1,1,1,3,3,3-hexafluoropropan-2-yl)oxy)carbonyl)piperazin-1-yl)methyl)-5-(trifluoromethyl)phenoxy)-2-methylpropanoic acid according to any of claims 1 to 7, or pharmaceutically acceptable salt thereof, for use in the treatment of acute repetitive seizures, temporal lobe epilepsy, Dravet syndrome, Lennox Gastaut syndrome or Angelman syndrome.

14. A method for the treatment of disease or a disorder selected from pain, epilepsy/seizure disorder, Alzheimer's disease, Huntington's chorea, Huntington's disease, multiple sclerosis, obsessive-compulsive disorder, Parkinson's disease, depression, post-traumatic stress disorder, generalized anxiety disorder, persistent motor tic disorder, persistent vocal tic disorder, and dystonia; which method comprises the administration of a therapeutically effective amount of a crystalline form of 2-(2-((4-(((1,1,1,3,3,3-hexafluoropropan-2-yl)oxy)carbonyl)piperazin-1-yl)methyl)-5-(trifluoromethyl)phenoxy)-2-methylpropanoic acid, or a pharmaceutically acceptable salt thereof according to any of claims 1 to 7, to a patient in need thereof.

15. Use of a crystalline form of 2-(2-((4-(((1,1,1,3,3,3-hexafluoropropan-2-yl)oxy)carbonyl)piperazin-1-yl)methyl)-5-(trifluoromethyl)phenoxy)-2-methylpropanoic acid, or a pharmaceutically acceptable salt thereof according to any of claims 1 to 7, in the manufacture of a medicament for the treatment of disease or a disorder selected from pain, epilepsy/seizure disorder, Alzheimer's disease, Huntington's chorea, Huntington's disease,

multiple sclerosis, obsessive-compulsive disorder, Parkinson's disease, depression, post-traumatic stress disorder, generalized anxiety disorder, persistent motor tic disorder, persistent vocal tic disorder, and dystonia.