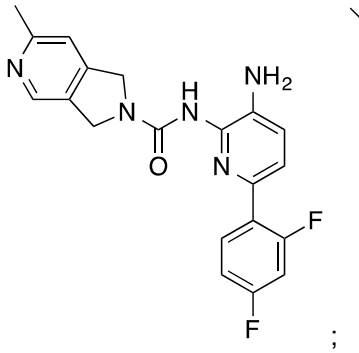
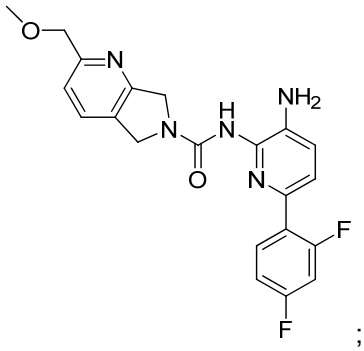
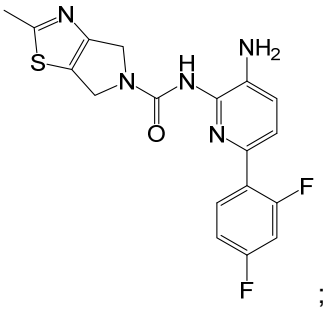
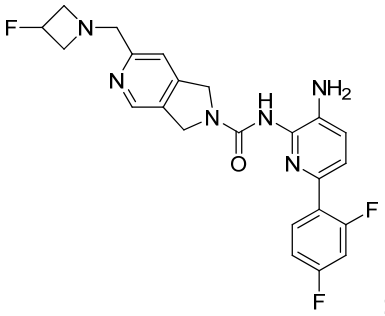
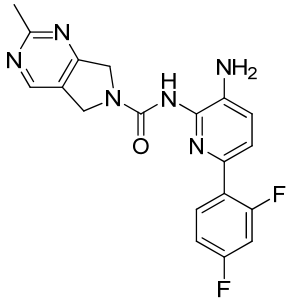
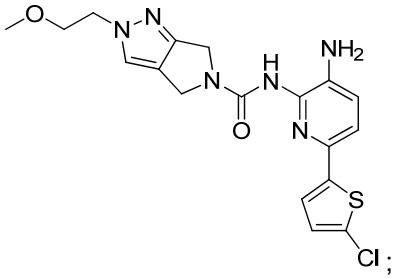
treatment of mice with SAHA (an HDAC 1,2,3,6, 8 inhibitor) reproduced the effects seen in the HDAC2 deficient mice and recused the cognitive impairment in the HDAC2 overexpression mice.

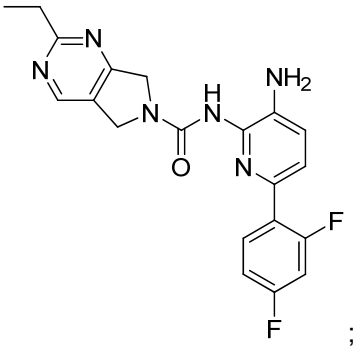
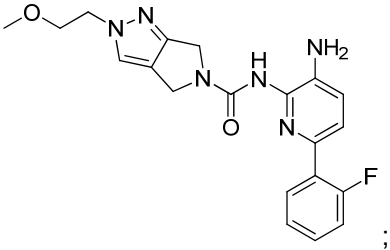
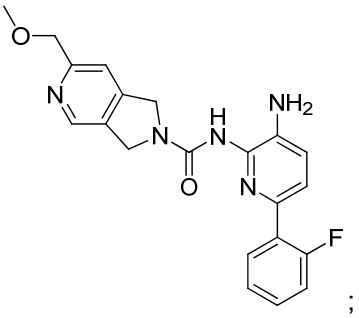
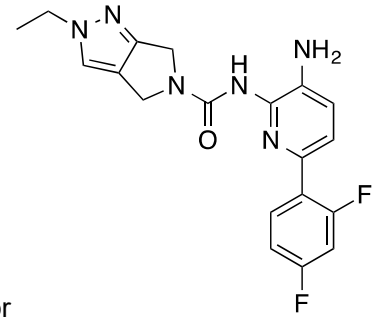
[0007] The inhibition of the HDAC2 (selectively or in combination with inhibition of other class I HDACs) is an attractive therapeutic target. Such inhibition has the potential for enhancing cognition and facilitating the learning process through increasing synaptic and dendritic density in neuronal cell populations. In addition, inhibition of HDAC2 may also be therapeutically useful in treating a wide variety of other diseases and disorders.

SUMMARY

[0008] Disclosed are compounds and pharmaceutically acceptable salts thereof, and pharmaceutical compositions, which are useful in the treatment of conditions associated with the activity of HDAC (e.g., HDAC2). See e.g., Table **1**.

[0008a] In one aspect of the present disclosure, there is provided a compound of the formula:


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or
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or a pharmaceutically acceptable salt thereof.

[0008b] In another aspect of the present disclosure, there is provided a composition comprising a compound disclosed herein, or a pharmaceutically acceptable salt thereof; and a pharmaceutically acceptable carrier.

[0008c] In a further aspect of the present disclosure, there is provided a compound disclosed herein, or a pharmaceutically acceptable salt thereof, for use in treating a condition in a subject selected from a neurological disorder, memory or cognitive function disorder or impairment, extinction learning disorder, fungal disease or infection, inflammatory disease, hematological disease, psychiatric disorders, and neoplastic disease.

[0008d] In another aspect of the present disclosure, there is provided a use of a compound disclosed herein, or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for treating a condition in a subject selected from a neurological disorder, memory or cognitive function disorder or impairment, extinction learning disorder, fungal disease or infection, inflammatory disease, hematological disease, psychiatric disorders, and neoplastic disease.

[0009] One of the advantages of certain compounds described herein is that they possess enhanced safety parameters. For example, the inclusion of an additional fluorine atom on the bottom phenyl ring of certain compounds provided almost a 2-fold increase in safety, showing fewer effects on human erythroid and myeloid progenitors. See e.g., **Table 4**,

Comparator 1 vs **Compound 10**; **Comparator 2** vs. **Compound 3**; **Comparator 5** vs. **Compound 1**; and **Comparator 6** vs. **Compound 2**. A similar result was seen between regioisomers (compare **Comparator 4** with **Compound 8**) and the replacement of hydrogen for fluorine (compare **Comparator 3** with **Compound 6**).

[0010] Conditions which are treatable by the disclosed compounds include, but are not limited to, neurological disorders, memory or cognitive function disorders or impairments, extinction learning disorders, fungal diseases or infections, inflammatory diseases, hematological diseases, neoplastic diseases, psychiatric disorders, and memory loss.

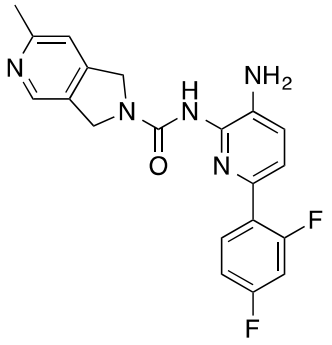
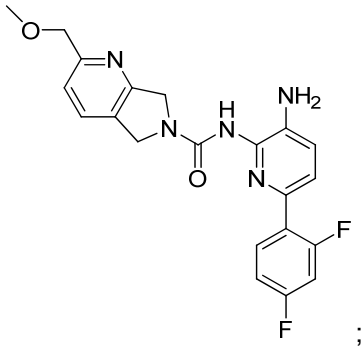
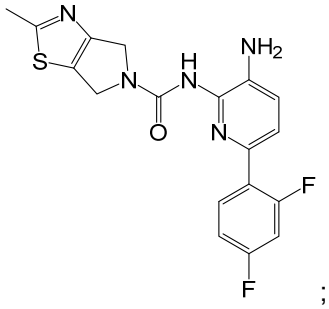
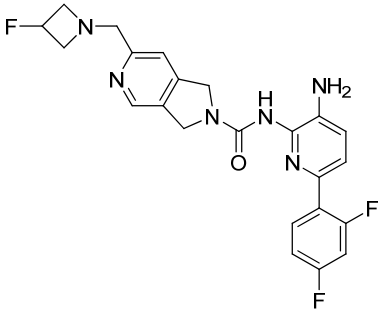
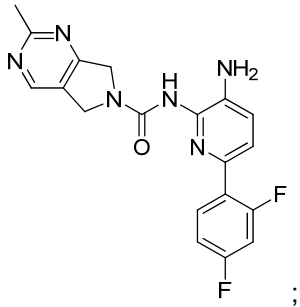
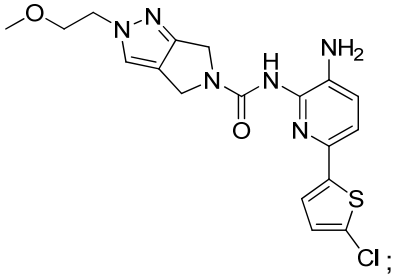
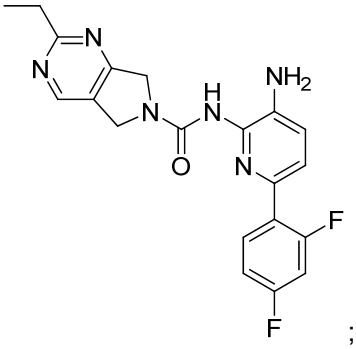
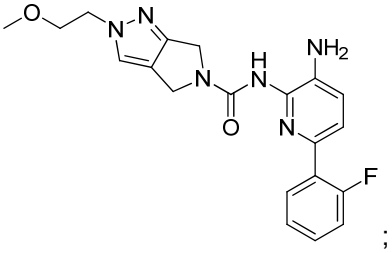
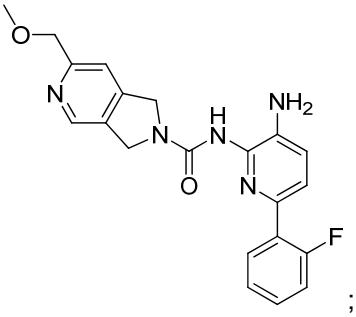
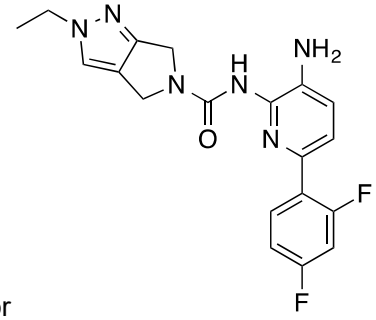
DETAILED DESCRIPTION

1. Compounds

[0011] Provided herein are compounds having the formula selected from:

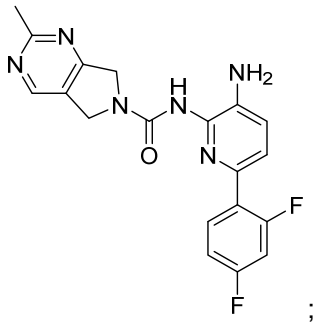
CLAIMS

1. A compound of the formula:


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or

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or a pharmaceutically acceptable salt thereof.

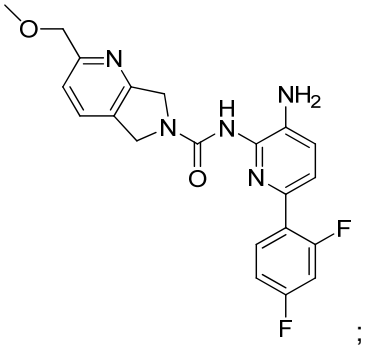
2. The compound of Claim 1, wherein the compound is of the Formula:



;

or a pharmaceutically acceptable salt thereof.

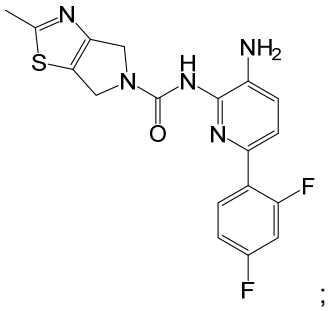
3. The compound of Claim 1, wherein the compound is of the Formula:



;

or a pharmaceutically acceptable salt thereof.

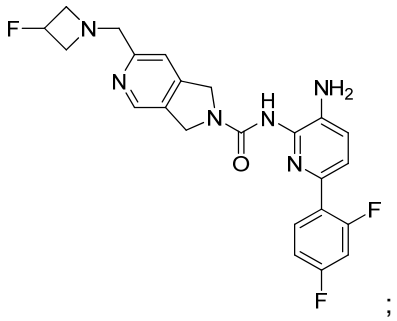
4. The compound of Claim 1, wherein the compound is of the Formula:



;

or a pharmaceutically acceptable salt thereof.

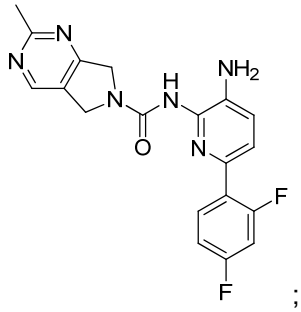
5. The compound of Claim 1, wherein the compound is of the Formula:



;

or a pharmaceutically acceptable salt thereof.

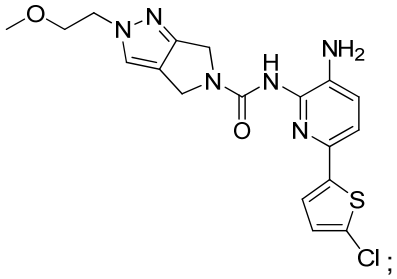
6. The compound of Claim 1, wherein the compound is of the Formula:



;

or a pharmaceutically acceptable salt thereof.

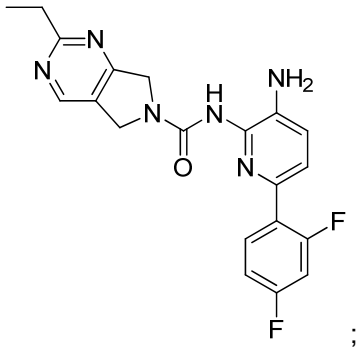
7. The compound of Claim 1, wherein the compound is of the Formula:



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or a pharmaceutically acceptable salt thereof.

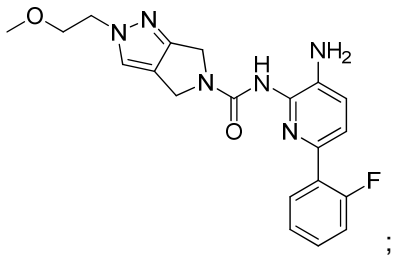
8. The compound of Claim 1, wherein the compound is of the Formula:



;

or a pharmaceutically acceptable salt thereof.

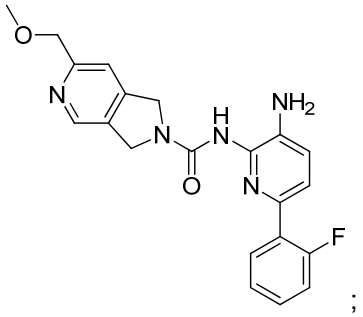
9. The compound of Claim 1, wherein the compound is of the Formula:



;

or a pharmaceutically acceptable salt thereof.

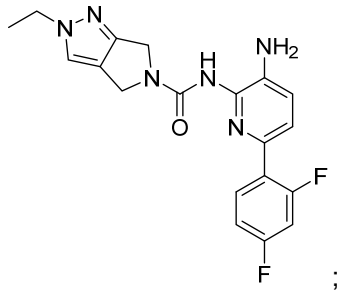
10. The compound of Claim 1, wherein the compound is of the Formula:



;

or a pharmaceutically acceptable salt thereof.

11. The compound of Claim 1, wherein the compound is of the Formula:



;

or a pharmaceutically acceptable salt thereof.

12. A composition comprising a compound of any one of claims 1 to 11, or a pharmaceutically acceptable salt thereof; and a pharmaceutically acceptable carrier.

13. A compound according to any one of Claims 1 to 11, or a pharmaceutically acceptable salt thereof, for use in treating a condition in a subject selected from a neurological disorder, memory or cognitive function disorder or impairment, extinction learning disorder, fungal disease or infection, inflammatory disease, hematological disease, psychiatric disorders, and neoplastic disease.

14. The compound for use of claim 13, wherein the condition is:

a. a cognitive function disorder or impairment associated with Alzheimer's disease, Huntington's disease, seizure induced memory loss, schizophrenia, Rubinstein Taybi syndrome, Rett Syndrome, Fragile X, Lewy body dementia, vascular dementia, frontotemporal dementia, ADHD, dyslexia, bipolar disorder and social, cognitive and learning disorders associated with autism, traumatic head injury, attention deficit disorder, anxiety disorder, conditioned fear response, panic disorder, obsessive compulsive disorder, posttraumatic stress disorder (PTSD), phobia, social anxiety disorder, substance dependence recovery, Age Associated Memory Impairment (AAMI), Age Related Cognitive Decline (ARCD), ataxia, or Parkinson's disease; or

b. a hematological disease selected from acute myeloid leukemia, acute promyelocytic leukemia, acute lymphoblastic leukemia, chronic myelogenous leukemia, myelodysplastic syndromes, and sickle cell anemia; or

c. a neoplastic disease; or

d. an extinction learning disorder selected from fear extinction and post-traumatic stress disorder.

15. The compound for use of claim 14, wherein the condition is Alzheimer’s disease, Huntington’s disease, frontotemporal dementia, Freidreich’s ataxia, post-traumatic stress disorder (PTSD), Parkinson’s disease, or substance dependence recovery.

16. Use of a compound according to any one of Claims 1 to 11, or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for treating a condition in a subject selected from a neurological disorder, memory or cognitive function disorder or impairment, extinction learning disorder, fungal disease or infection, inflammatory disease, hematological disease, psychiatric disorders, and neoplastic disease.

17. The use of claim 16, wherein the condition is:

a. a cognitive function disorder or impairment associated with Alzheimer’s disease, Huntington’s disease, seizure induced memory loss, schizophrenia, Rubinstein Taybi syndrome, Rett Syndrome, Fragile X, Lewy body dementia, vascular dementia, frontotemporal dementia, ADHD, dyslexia, bipolar disorder and social, cognitive and learning disorders associated with autism, traumatic head injury, attention deficit disorder, anxiety disorder, conditioned fear response, panic disorder, obsessive compulsive disorder, posttraumatic stress disorder (PTSD), phobia, social anxiety disorder, substance dependence recovery, Age Associated Memory Impairment (AAMI), Age Related Cognitive Decline (ARCD), ataxia, or Parkinson’s disease; or

b. a hematological disease selected from acute myeloid leukemia, acute promyelocytic leukemia, acute lymphoblastic leukemia, chronic myelogenous leukemia, myelodysplastic syndromes, and sickle cell anemia; or

c. a neoplastic disease; or

d. an extinction learning disorder selected from fear extinction and post-traumatic stress disorder.

18. The use of claim 17, wherein the condition is Alzheimer's disease, Huntington's disease, frontotemporal dementia, Freidreich's ataxia, post-traumatic stress disorder (PTSD), Parkinson’s disease, or substance dependence recovery.