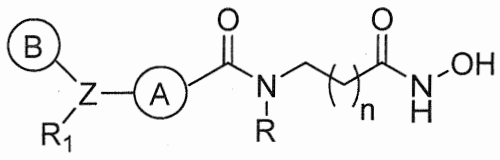
CLAIMS:

1. A compound of formula I:



(I);

or a pharmaceutically acceptable salt thereof,

wherein,

Z is N;

ring A is aryl or heteroaryl, each of which may be optionally substituted with halo;

ring B is aryl or heteroaryl, each of which may be optionally substituted with alkyl, aryl, heteroaryl, cycloalkyl, heterocycloalkyl, aralkyl, haloalkyl, halo, alkoxy, OH, NH_2, NHR", CN, N_3, or NO_2;

R_1 is H, alkyl, haloalkyl, alkenyl, aryl, aralkyl, heteroaryl, heterocyclic, carbocyclic, C(O)-R_2, or C(O)O-R_2, wherein alkyl, haloalkyl, alkenyl, aryl, aralkyl, heteroaryl, heterocyclic, carbocyclic, C(O)-R_2, or C(O)O-R_2 may be optionally substituted with OH, halo, alkyl, or alkoxy;

R is H or R'' is H or alkyl;

each R_2 is independently alkyl, cycloalkyl, heterocycloalkyl, aryl, or heteroaryl; and

n is 3, 4, 5, 6, 7 or 8.

2. The compound of claim 1, wherein ring A is phenyl, naphthyl, anthracenyl, pyridinyl, pyrimidinyl, pyrazinyl, indolyl, imidazolyl, oxazolyl, furyl, thienyl, thiazolyl, triazolyl, isoxazolyl, quinolinyl, pyrrolyl, pyrazolyl, or 5,6,7,8-tetrahydroisoquinoline; each of which may be optionally substituted with halo.

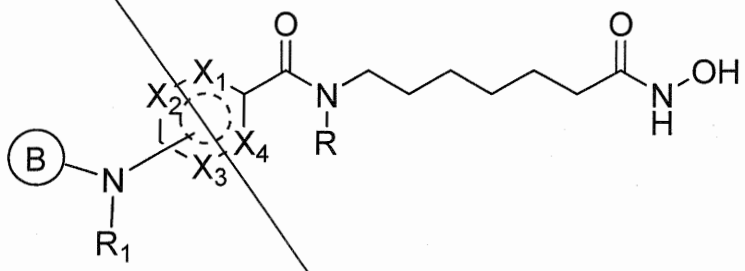
3. The compound of claim 1, wherein R_1 is H, methyl, ethyl, propyl, i-propyl, butyl, i-butyl, t-butyl, pentyl, hexyl, phenyl, naphthyl, pyridinyl, OH or OCH_3; each of which may be optionally substituted with OH, halo, alkyl, or alkoxy.

4. The compound of claim 1, wherein the carbonyl and the Z group attached to ring A are disposed para to each other.

5. The compound of claim 1, wherein the carbonyl and Z group attached to ring A are disposed meta to each other.

6. The compound of claim 1, wherein the carbonyl and the Z group attached to ring A are disposed ortho to each other.

7. The compound of claim 1, of formula II:



(II);

or a pharmaceutically acceptable salt thereof,

wherein,

each of X_1, X_2, X_3, or X_4 is independently N, CR', O, or S; wherein up to three of X_1, X_2, X_3, or X_4 may be N;

ring B is aryl or heteroaryl; each of which may be optionally substituted with alkyl, aryl, heteroaryl, cycloalkyl, heterocycloalkyl, aralkyl, haloalkyl, halo, alkoxy, OH, NH_2, NHR", CN, N_3, or NO_2;

R_1 is H, alkyl, haloalkyl, alkenyl, aryl, aralkyl, heteroaryl, heterocyclic, carbocyclic, C(O)-R_2, or C(O)O-R_2, each of which may be optionally substituted with OH, halo, alkyl, or alkoxy;

R is H or alkyl;

each R' is independently H, alkyl, halo, OH, NH_2, NHR", haloalkyl, CN, N_3, NO_2;

R" is H or alkyl; and

R_2 is alkyl, cycloalkyl, heterocycloalkyl, aryl, or heteroaryl.

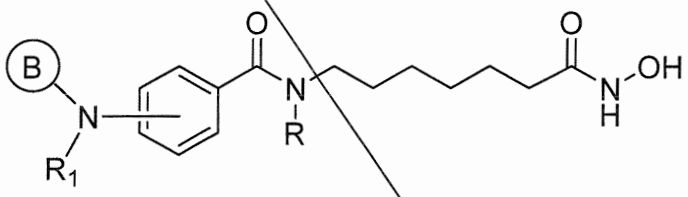
8. The compound of claim 7, wherein X_1, X_2, X_3, and X_4 are all CR'.

9. The compound of claim 7, wherein X_2 and X_3, are N and X_1 and X_4 are CR'.

10. The compound of claim 7, wherein ring B is phenyl, pyridinyl, pyrimidinyl, or pyrazinyl; each of which may be optionally substituted with alkyl, aryl, heteroaryl, cycloalkyl, heterocycloalkyl, aralkyl, haloalkyl, halo, alkoxy, OH, NH_2, NHR", CN, N_3, or NO_2.

11. The compound of claim 7, R_1 is H, alkyl, aryl, aralkyl, or heteroaryl, each of which may be optionally substituted with OH, halo, alkyl, or alkoxy.

12. The compound of claim 1, of formula III:



(III);

or a pharmaceutically acceptable salt thereof,

wherein,

ring B is aryl or heteroaryl, each of which may be optionally substituted with alkyl, aryl, aralkyl, haloalkyl, halo, alkoxy, OH, NH_2, CN, or NO_2;

R_1 is H, alkyl, haloalkyl, alkenyl, aryl, aralkyl, heteroaryl, heterocyclic, carbocyclic, C(O)-R_2, or C(O)O-R_2, each of which may be optionally substituted with OH, halo, alkyl, or alkoxy;

R_2 is heteroaryl, and

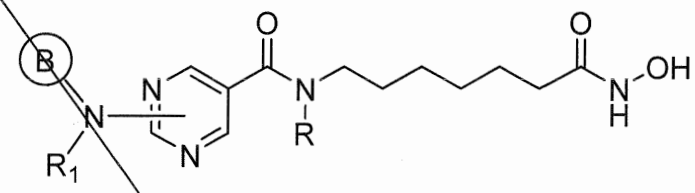
R is H or alkyl.

13. The compound of claim 12, wherein ring B is phenyl, pyridinyl, pyrimidinyl, or pyrazinyl; each of which may be optionally substituted with alkyl, aryl, aralkyl, haloalkyl, halo, alkoxy, OH, NH_2, CN, or NO_2.

14. The compound of claim 12, wherein R_1 is H, alkyl, aryl, aralkyl, heteroaryl, C(O)-R_2, or C(O)O-R_2, each of which may be optionally substituted with OH, halo, alkyl, or alkoxy.

15. The compound of claim 14, wherein R_2 is pyridinyl.

16. The compound of claim 1, of formula IV:



(IV);

or a pharmaceutically acceptable salt thereof,

wherein,

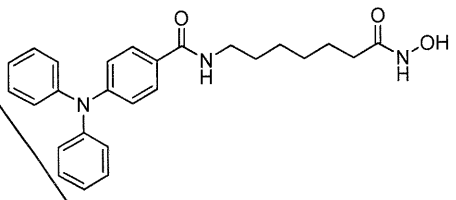
ring B is aryl or heteroaryl, each of which may be optionally substituted with alkyl, aryl, aralkyl, haloalkyl, halo, OH, NH_2, CN, or NO_2;

R_1 is H, alkyl, haloalkyl, alkenyl, aryl, aralkyl, heteroaryl, heterocyclic, or carbocyclic, each of which may be optionally substituted with OH, halo, or alkyl;

17. The compound of claim 16, wherein ring B is phenyl, pyridinyl, pyrimidinyl, or pyrazinyl; each of which may be optionally substituted with alkyl, aryl, aralkyl, haloalkyl, halo, OH, NH_2, CN, or NO_2.

18. The compound of claim 16, wherein R_1 is H, alkyl, aryl, aralkyl, or heteroaryl, each of which may be optionally substituted with OH, halo, or alkyl.

19. The compound of claim 1, selected from the following: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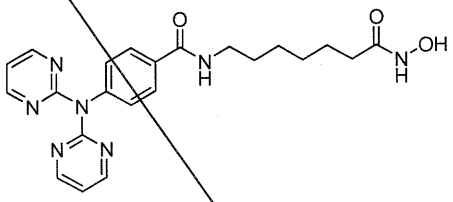
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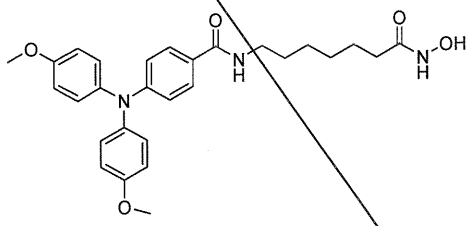
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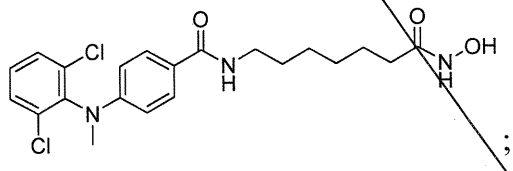
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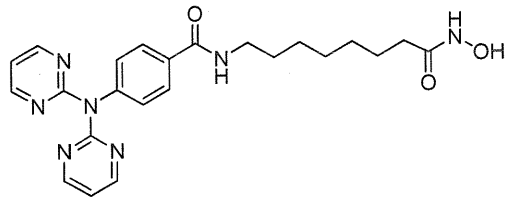
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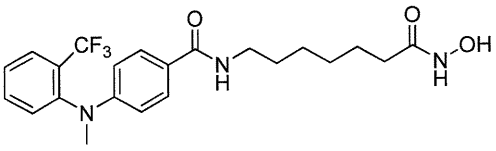
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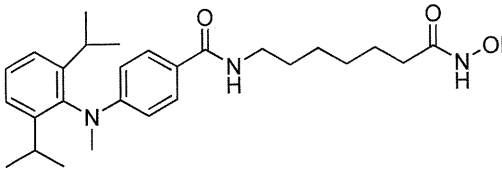
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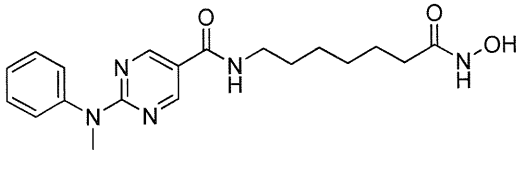
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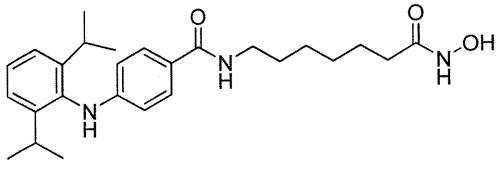
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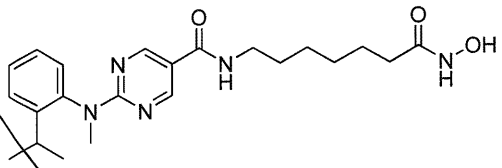
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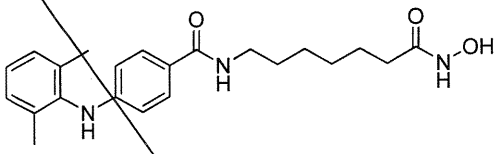
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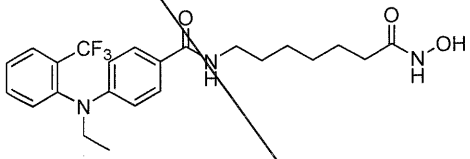
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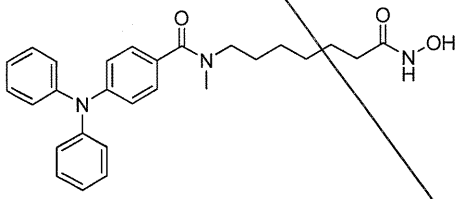
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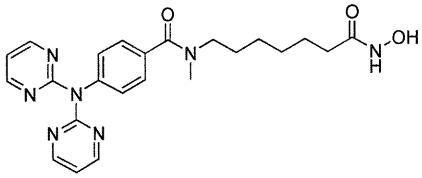
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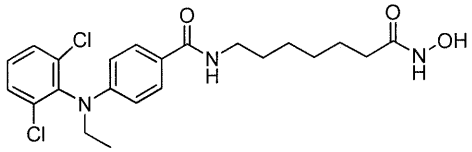
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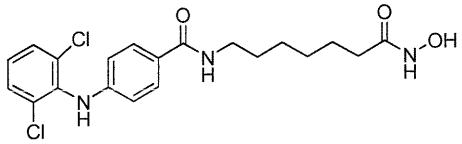
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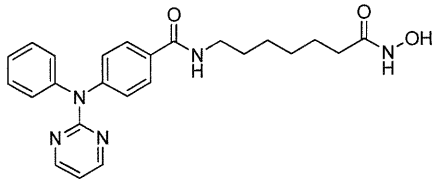
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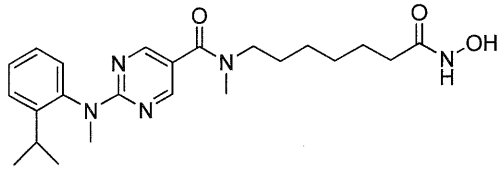
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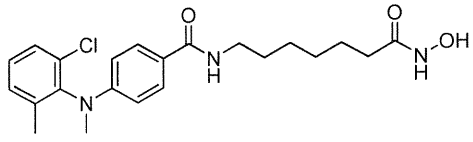
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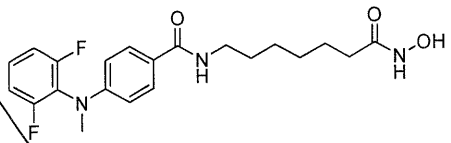
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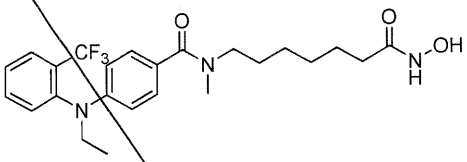
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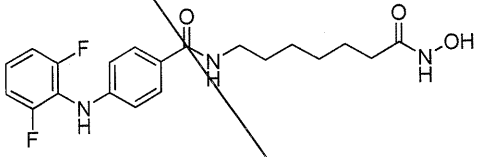
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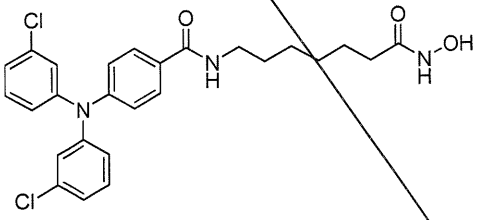
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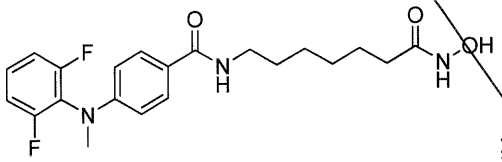
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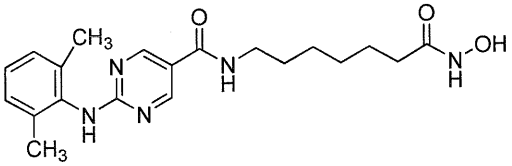
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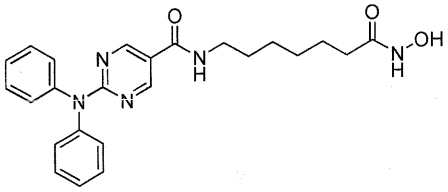
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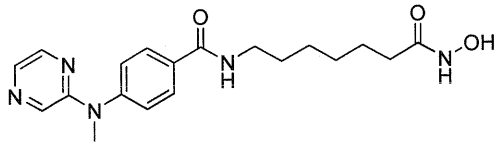
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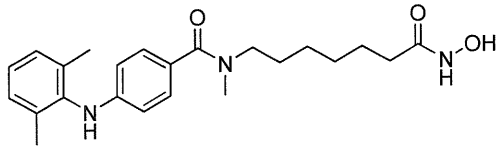
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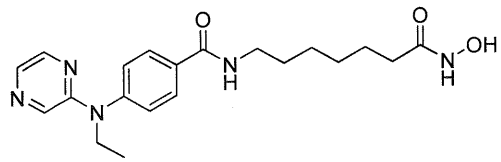
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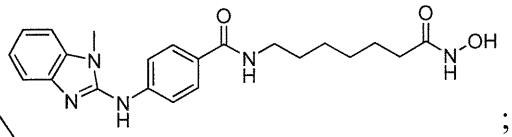
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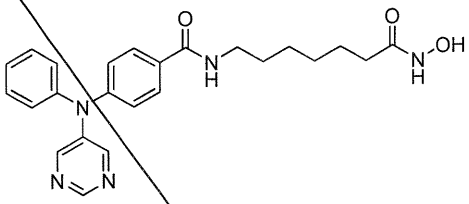
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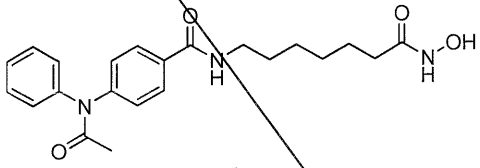
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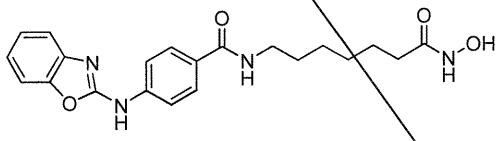
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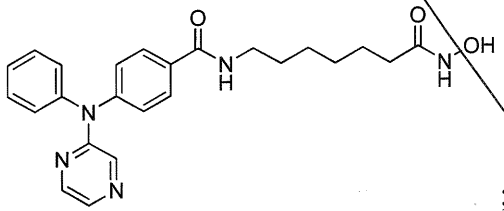
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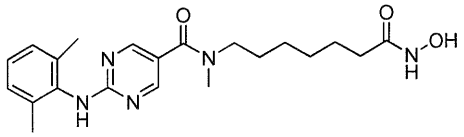
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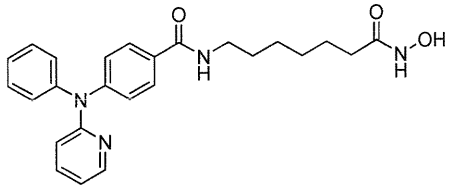
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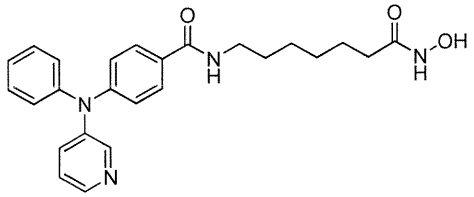
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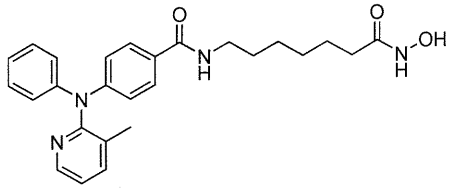
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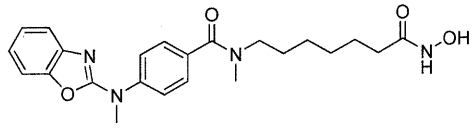
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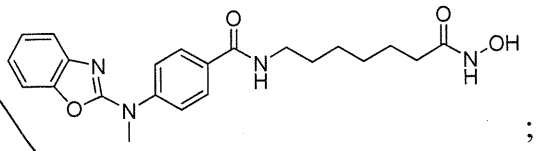
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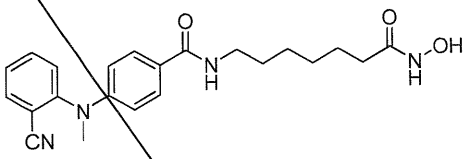
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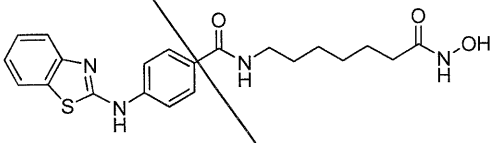
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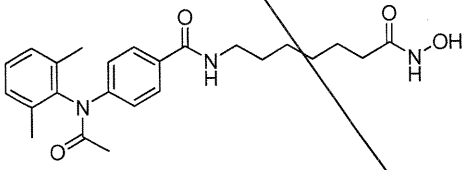
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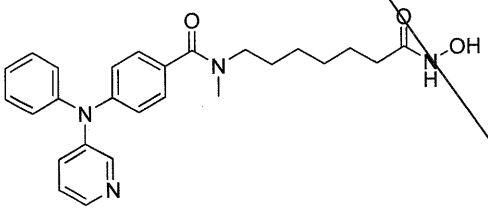
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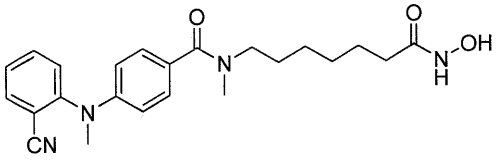
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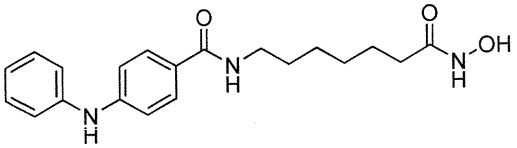
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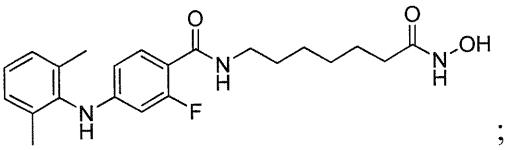
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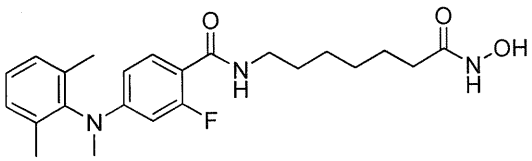
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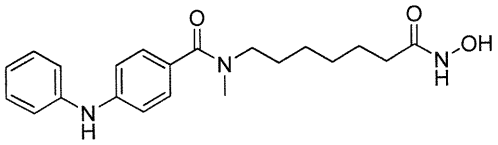
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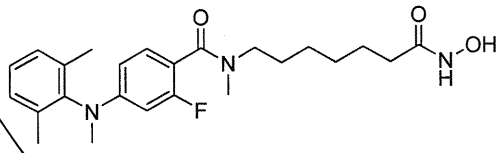
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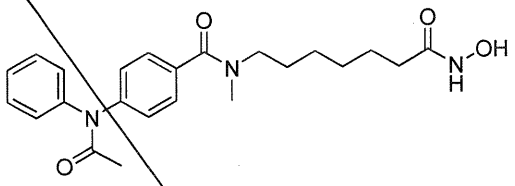
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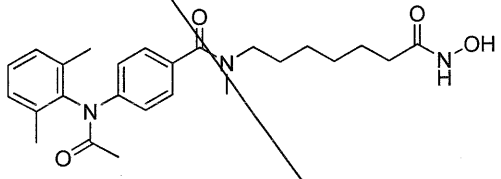
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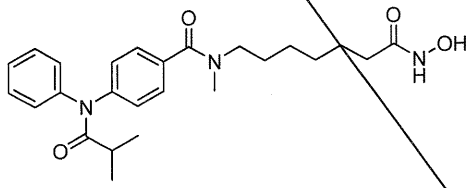
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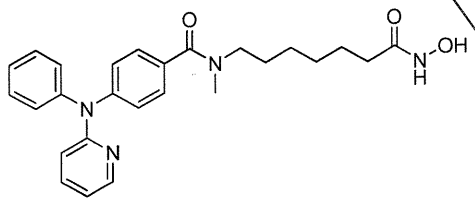
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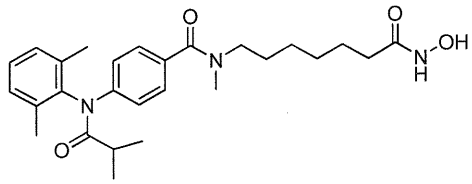
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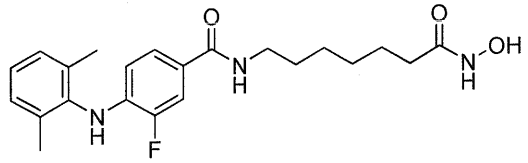
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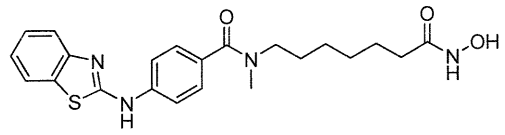
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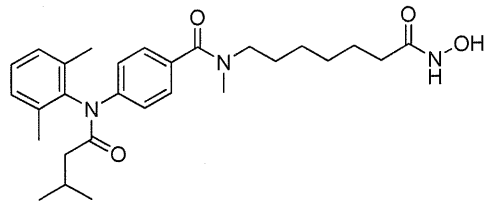
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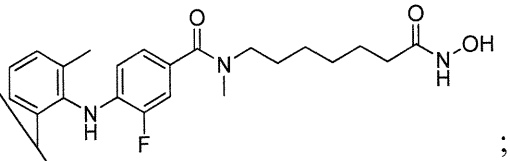
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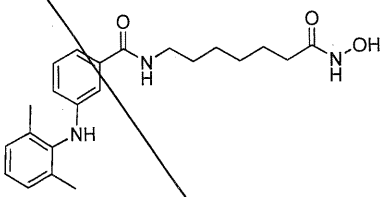
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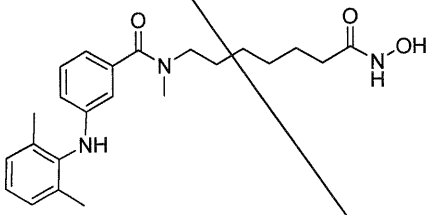
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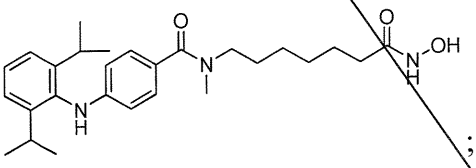
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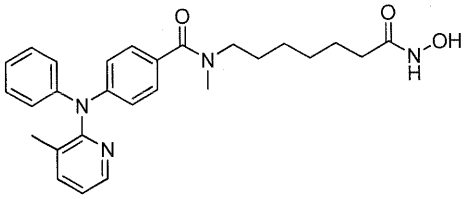
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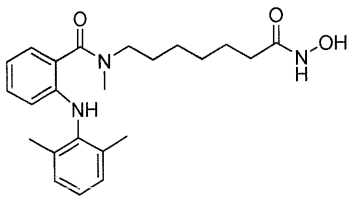
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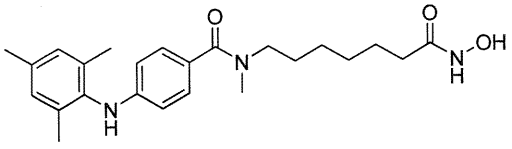
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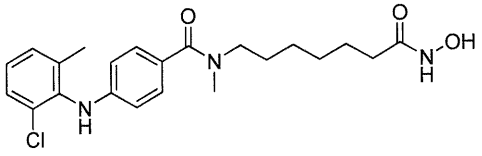
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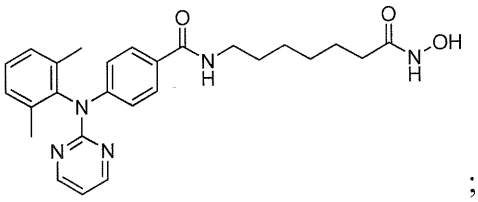
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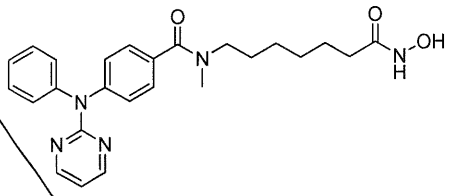
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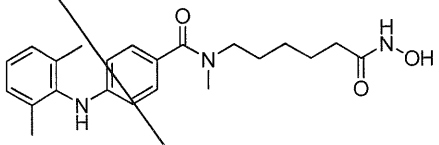
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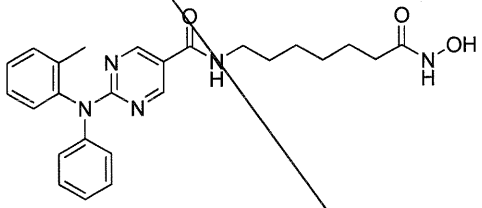
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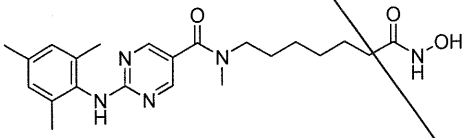
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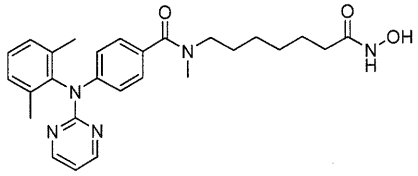
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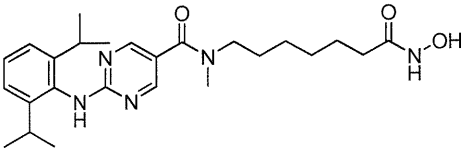
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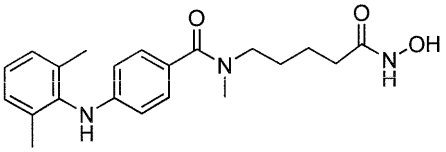
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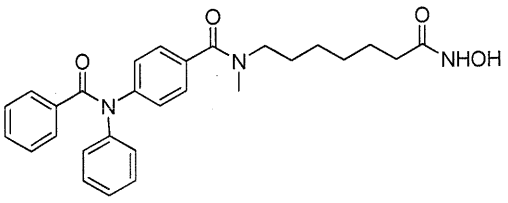
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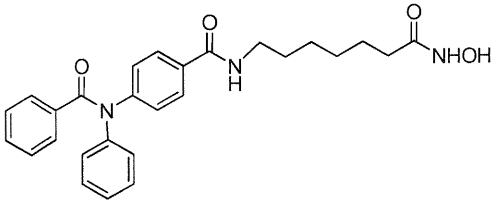
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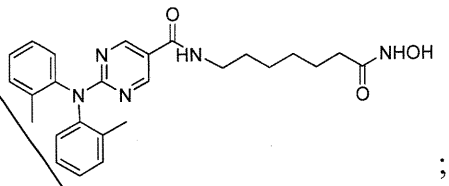
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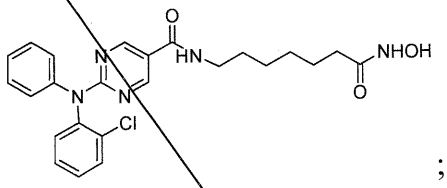
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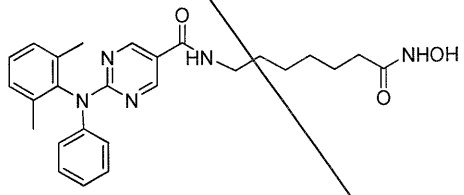
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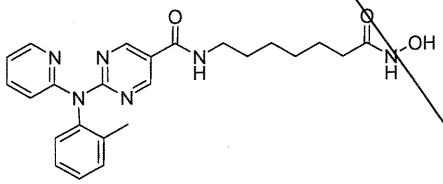
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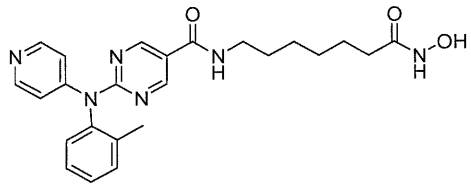
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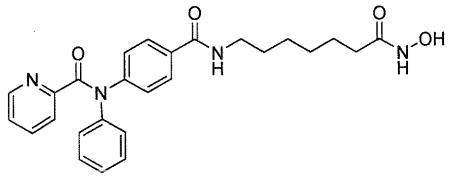
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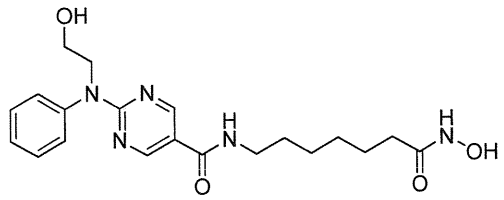
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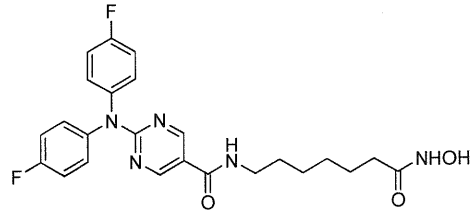


or pharmaceutically acceptable salts thereof.

20. A pharmaceutical composition comprising a compound of any one of claims 1 to 19, or a pharmaceutically acceptable salt thereof, together with a pharmaceutically acceptable carrier.

21. A compound of any one of claims 1 to 19,
or a pharmaceutically acceptable salt thereof,
for use in a method of selectively inhibiting HDAC6 over other HDACs in a subject, wherein the compound is for administering to the subject.

22. Compound for the use of claim 21, wherein the compound has a selectivity for HDAC6 of 5 to 1000 fold.

23. Compound for the use of claim 21, wherein the compound has a selectivity for HDAC6 when tested in a HDAC enzyme assay of about 5 to 1000 fold.

24. A compound of any one of claims 1 to 19,
or a pharmaceutically acceptable salt thereof,
for use in a method of treating a disease mediated by HDAC-6 in a subject, wherein the compound is for administering to the subject.

25. Compound for the use of claim 24, wherein the disease is cancer or a proliferation disease.

26. Compound for the use of claim 25, wherein the disease is lung cancer, colon cancer, breast cancer, prostate cancer, liver cancer, pancreas cancer, brain cancer, kidney cancer, ovarian cancer, stomach cancer, skin cancer, bone cancer, gastric cancer, breast cancer, pancreatic cancer, glioma, gliobastoma, hepatocellular carcinoma, papillary renal carcinoma, head and neck squamous cell carcinoma, leukemias, lymphomas, myelomas, and solid tumors.

27. Compound for the use of claim 25, wherein the cancer is multiple myeloma.

28. Compound for the use of claim 24, wherein the disease is Wilson's disease, spinocerebellar ataxia, prion disease, Parkinson's disease, Huntington's disease, amytrophic

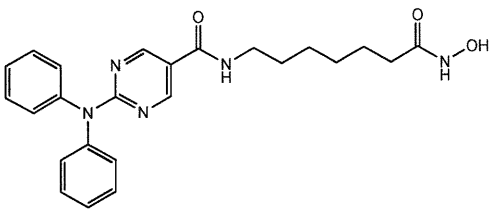
lateral sclerosis, amyloidosis, Alzheimer's disease, Alexander's disease, alcoholic liver disease, cystic fibrosis, Pick's Disease, spinal muscular dystrophy or Lewy body dementia.

29. Compound for the use of claim 24, wherein the disease is rheumatoid arthritis, osteoarthritis; rheumatoid spondylitis; psoriasis; post ischemic perfusion injury; inflammatory bowel disease; chronic inflammatory pulmonary disease, eczema, asthma, psoriasis, ischemia/reperfusion injury, ulcerative colitis, acute respiratory distress syndrome, psoriatic arthritis, infectious arthritis, progressive chronic arthritis, deforming arthritis, osteoarthritis, traumatic arthritis, gouty arthritis, Reiter's syndrome, polychondritis, acute synovitis and spondylitis, glomerulonephritis, hemolytic anemia, aplasic anemia, idiopathic thrombocytopenia, neutropenia, ulcerative colitis, Crohn's disease, host versus graft disease, allograft rejection, chronic thyroiditis, Graves' disease, schleroderma, diabetes, active hepatitis, primary binary cirrhosis, myasthenia gravis, multiple sclerosis (MS), systemic lupus erythematosus, atopic dermatitis, contact dermatitis, skin sunburns, chronic renal insufficiency, Stevens-Johnson syndrome, idiopathic sprue, sarcoidosis, Guillain-Barre syndrome, uveitis, conjunctivitis, keratoconjunctivitis, otitis media, periodontal disease, pulmonary interstitial fibrosis, asthma, bronchitis, rhinitis, sinusitis, pneumoconiosis, pulmonary insufficiency syndrome, pulmonary emphysema, pulmonary fibrosis, silicosis, or chronic inflammatory pulmonary disease.

30. A compound of any one of claims 1 to 19, or a pharmaceutically acceptable salt thereof for use in a method of treating a subject suffering from or susceptible to multiple myeloma, wherein the compound is for administration in a therapeutically effective amount to thereby treat the subject in need thereof.

31. Compound for the use of any one of claims 24 to 30, wherein the subject is human.

32. A compound of claim 19, wherein the compound is selected from:



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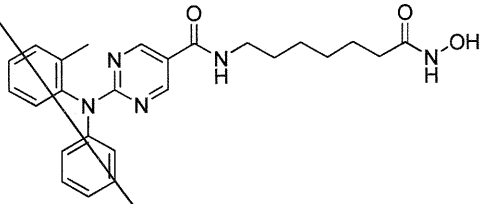

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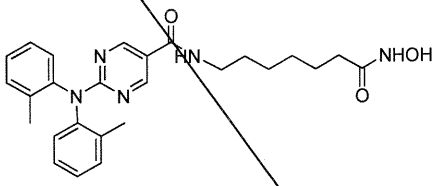

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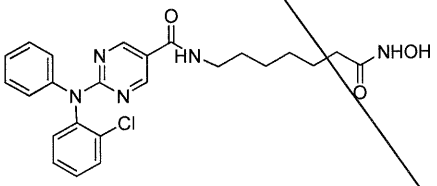

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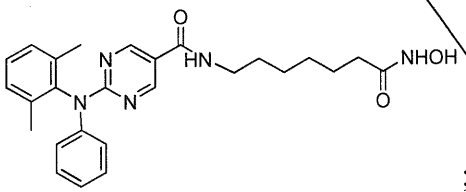

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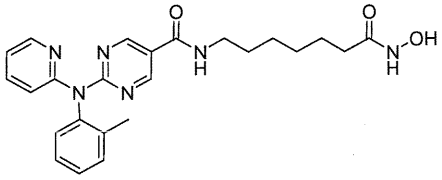

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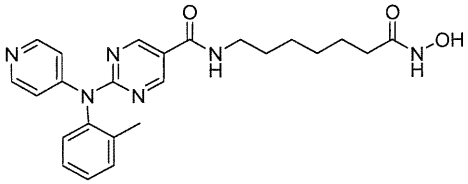

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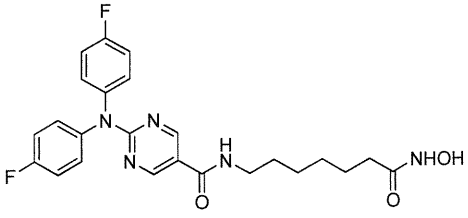
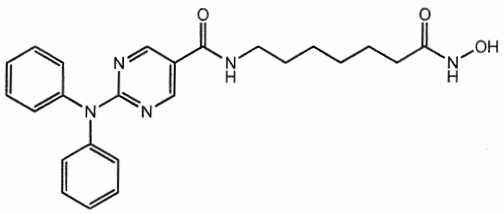


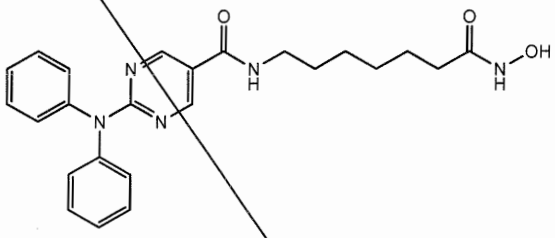
or a pharmaceutically acceptable salt thereof.

33. The compound:

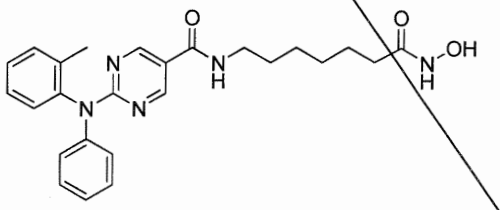


or a pharmaceutically acceptable salt thereof.

34. The compound:

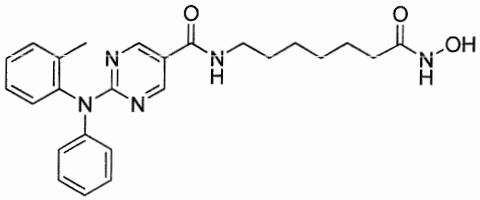


35. The compound:

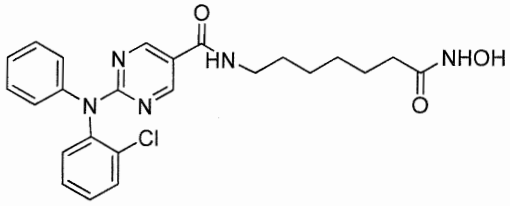


or a pharmaceutically acceptable salt thereof.

36. The compound:

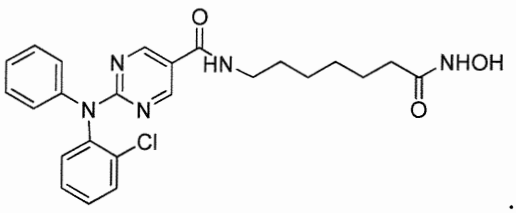


37. The compound:

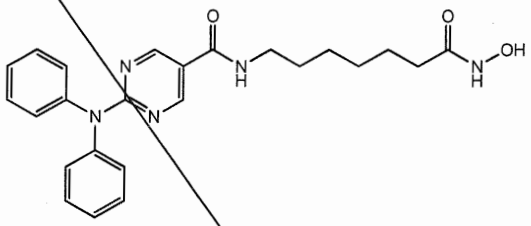


or a pharmaceutically acceptable salt thereof.

38. The compound:

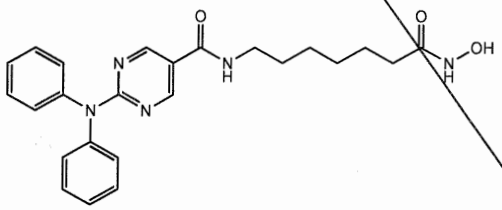


39. A pharmaceutical composition comprising the compound



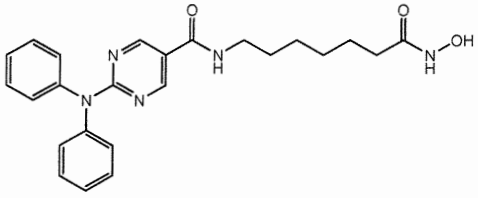
or a pharmaceutically acceptable salt thereof, together with a pharmaceutically acceptable carrier.

40. A pharmaceutical composition comprising the compound



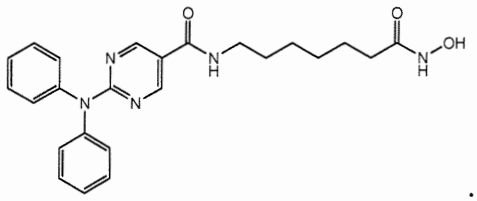
together with a pharmaceutically acceptable carrier.

41. The compound:



or a pharmaceutically acceptable salt thereof, for use in a method of treating multiple myeloma in a subject, wherein the compound is for administering to the subject.

42. The compound:

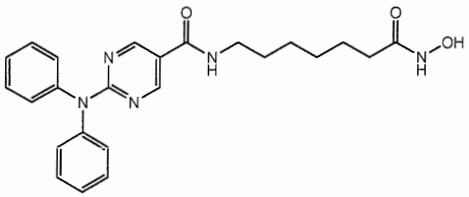


or a pharmaceutically acceptable salt thereof, for use in a method of treating multiple myeloma in a subject, wherein the compound is for administering to the subject

43. Use of a compound according to any one of claims 1 to 19 or a pharmaceutically acceptable salt thereof for the preparation of a composition for selectively inhibiting HDAC6 over other HDACs in a subject, wherein the composition is for administering to the subject.

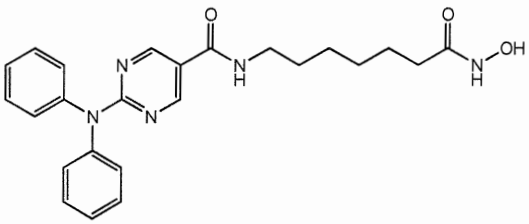
44. Use of a compound according to any one of claims 1 to 19 or a pharmaceutically acceptable salt thereof, for the preparation of a pharmaceutical composition for treating a subject suffering from or susceptible to multiple myeloma.

45. Use of the compound:



or a pharmaceutically acceptable salt thereof, for the preparation of a pharmaceutical composition for treating a subject suffering from or susceptible to multiple myeloma.

46. Use of the compound:

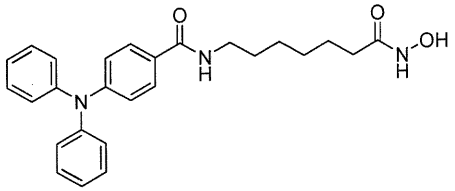


or a pharmaceutically acceptable salt thereof, for the preparation of a pharmaceutical composition for treating a subject suffering from or susceptible to multiple myeloma.

5

CLAIMS:

1. A compound selected from: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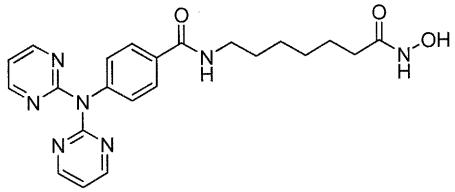
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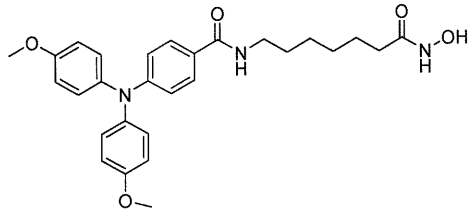
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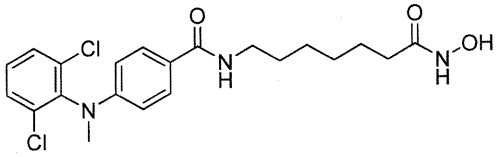
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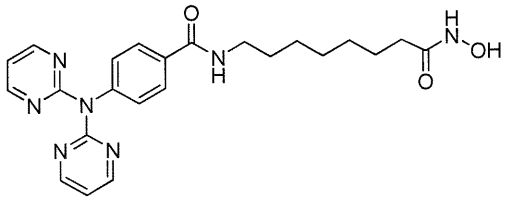
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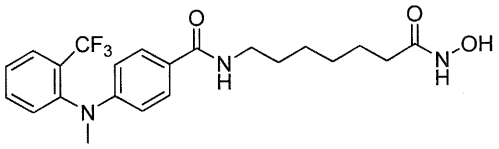
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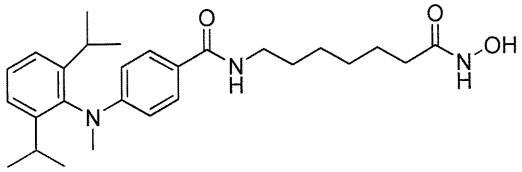
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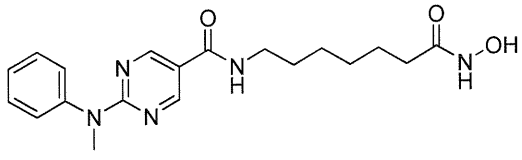
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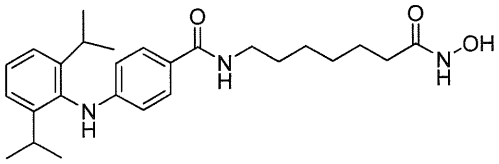
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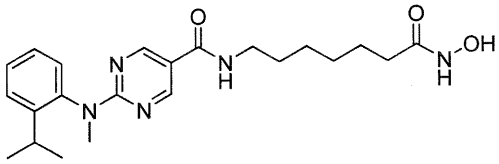
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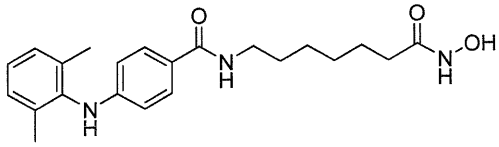
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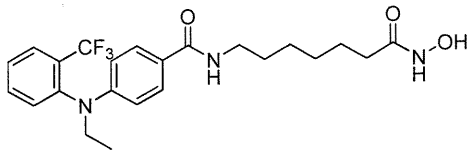
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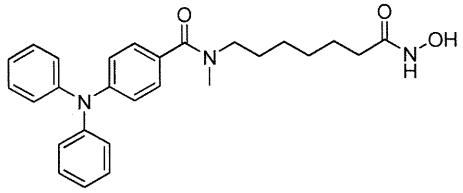
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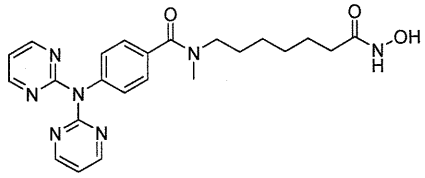
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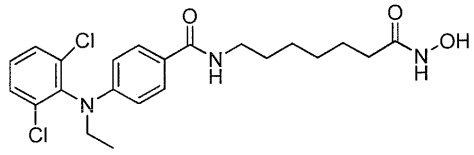
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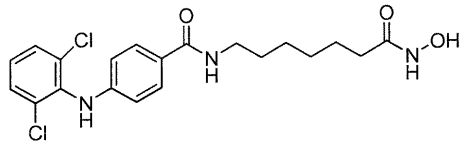
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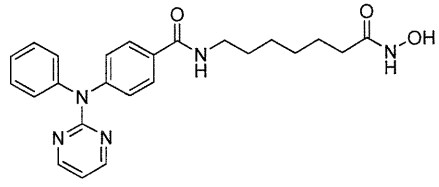
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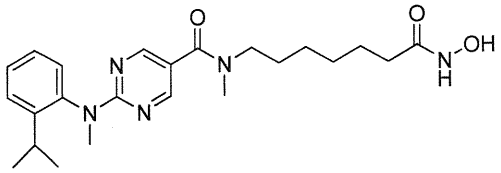
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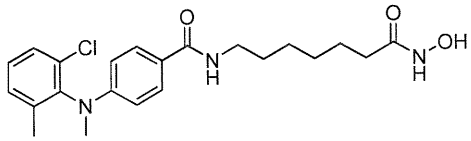
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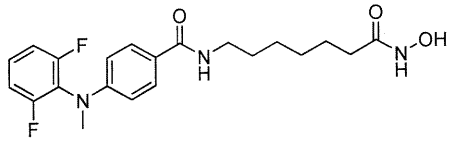
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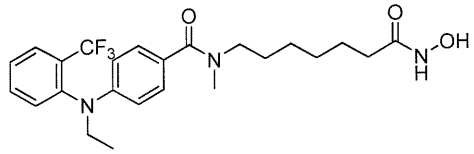
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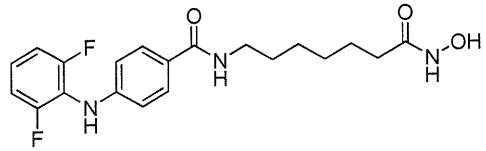
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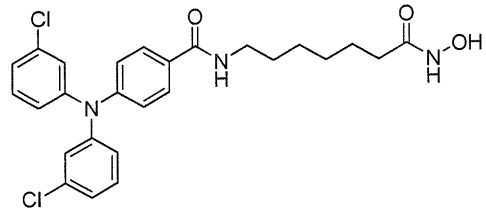
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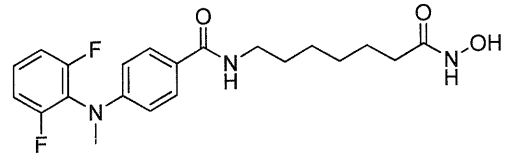
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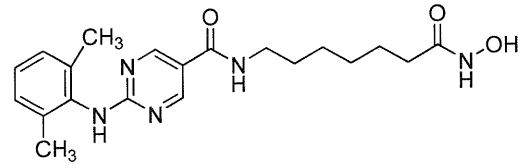
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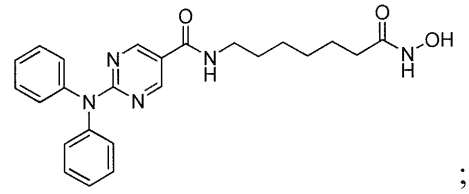
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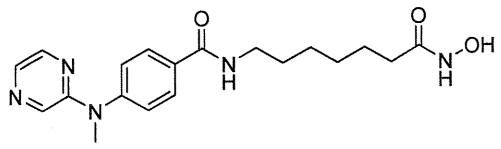
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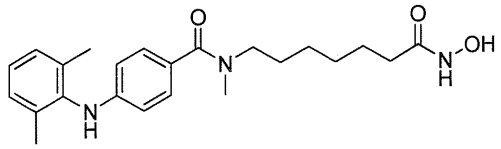
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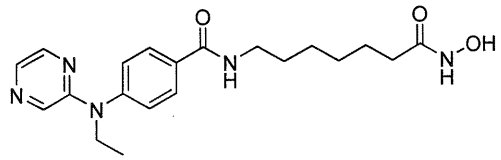
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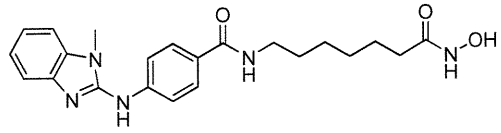
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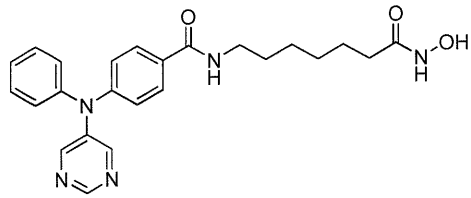
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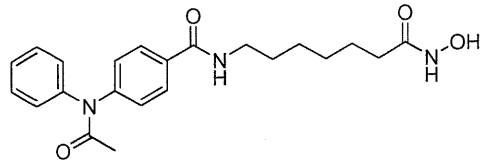
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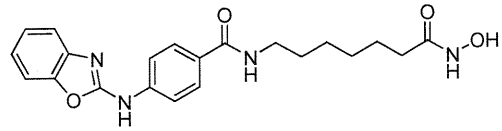
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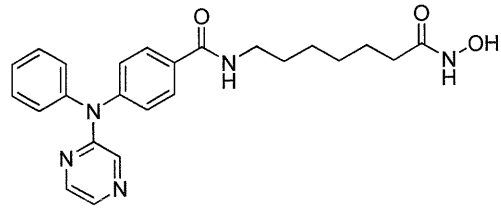
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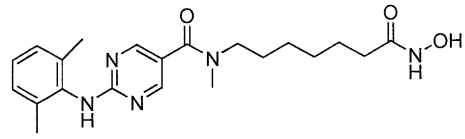
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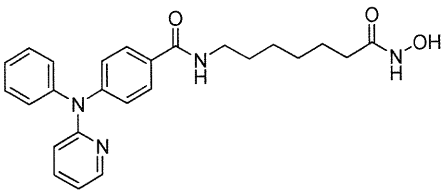
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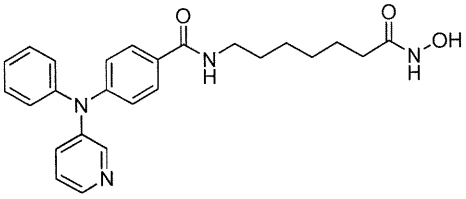
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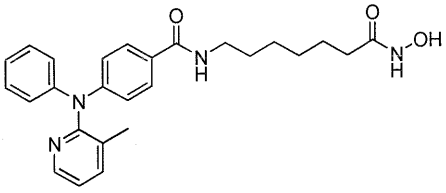
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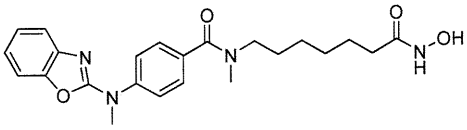
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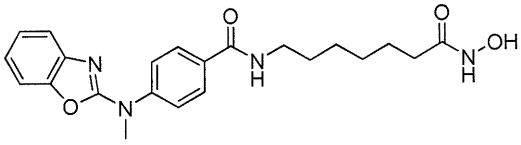
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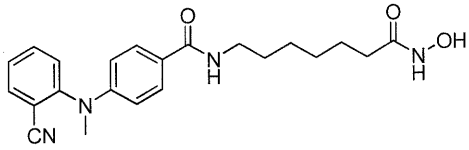
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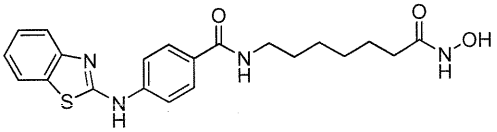
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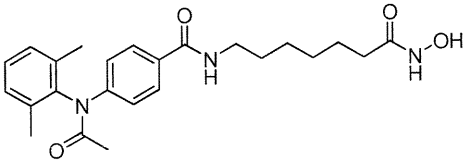
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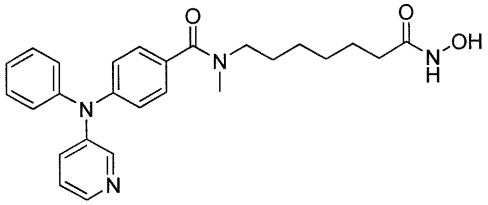
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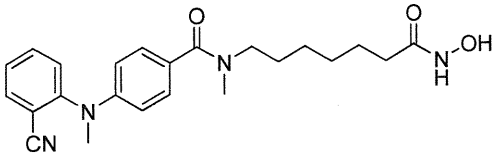

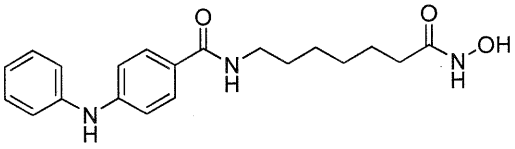

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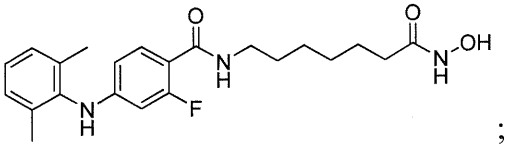

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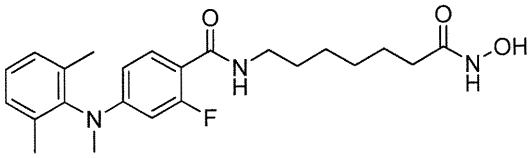

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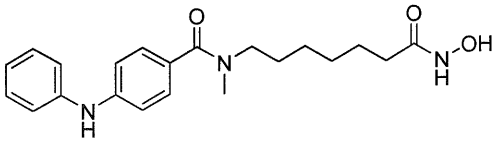

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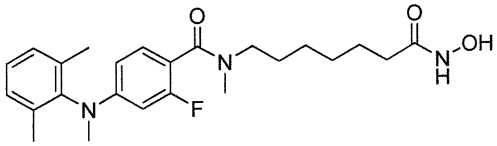

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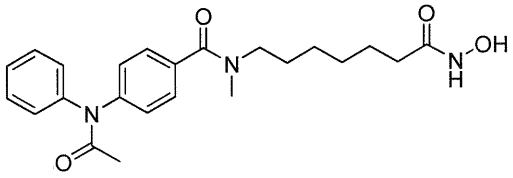

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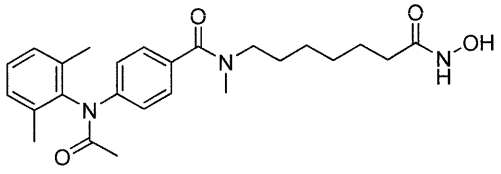

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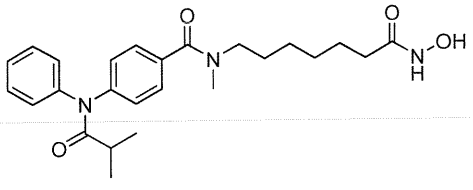

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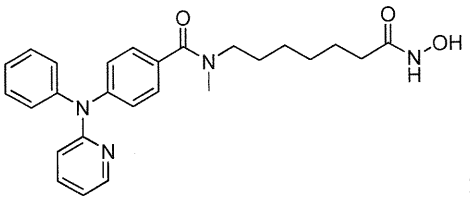

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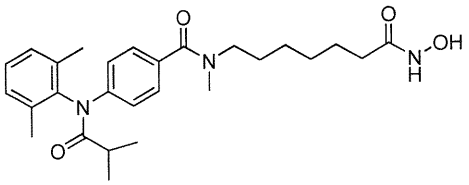

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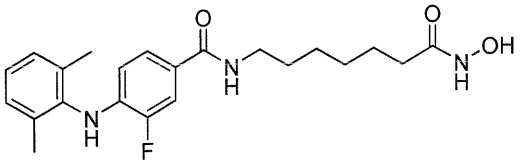

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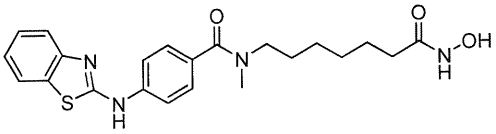

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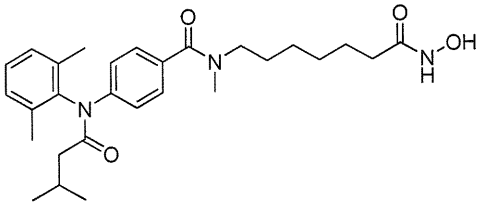

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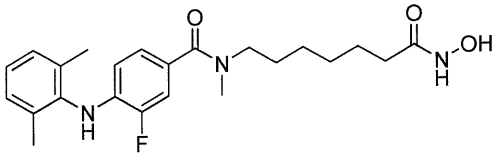

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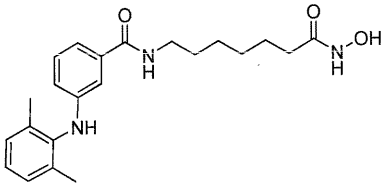

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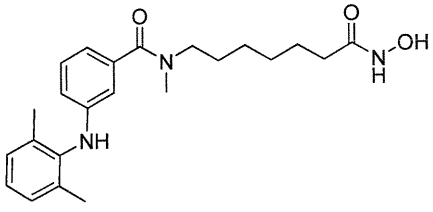

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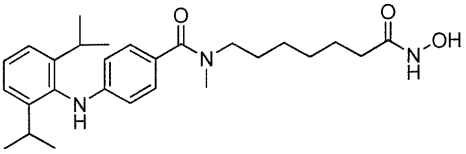
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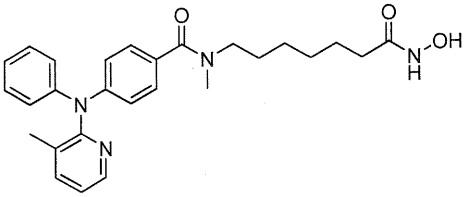
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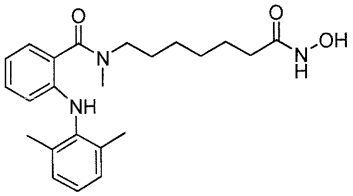
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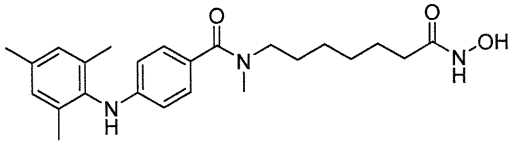
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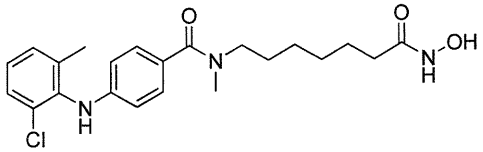
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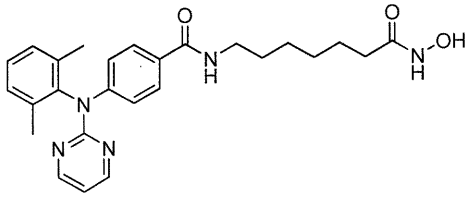
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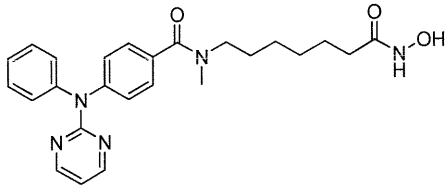
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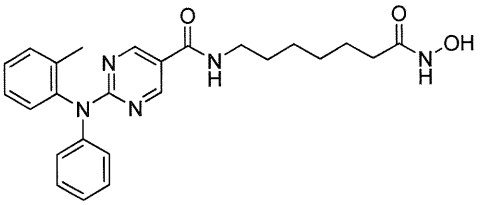

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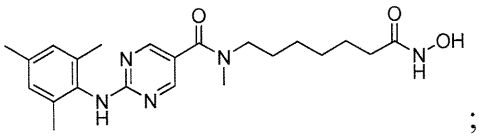

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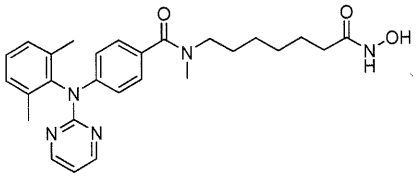

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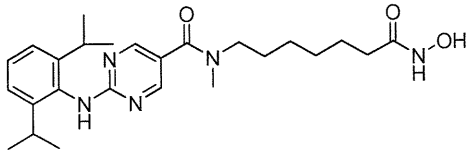

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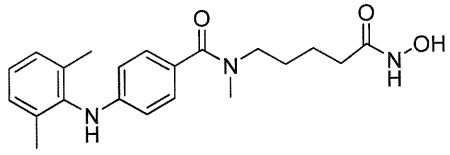

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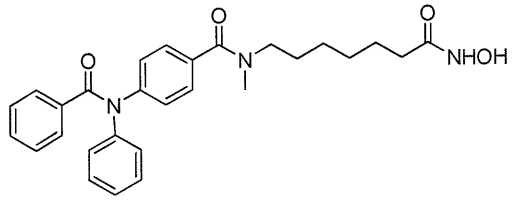

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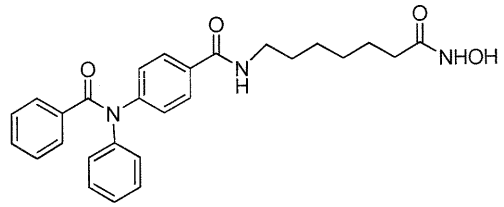

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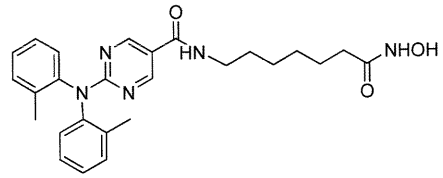

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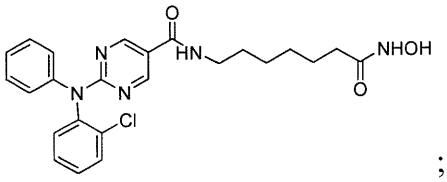
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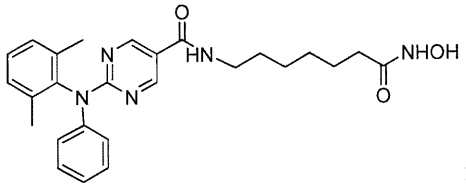
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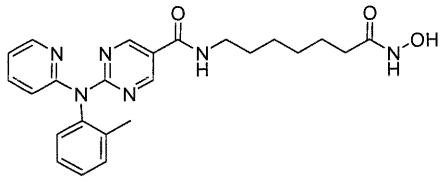
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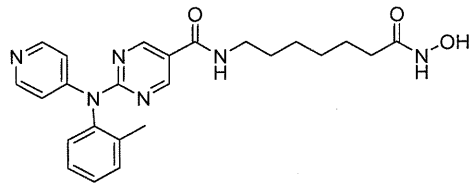
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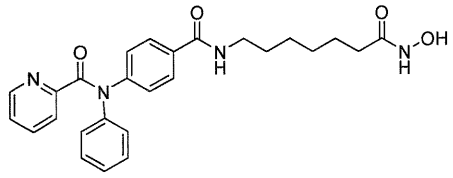
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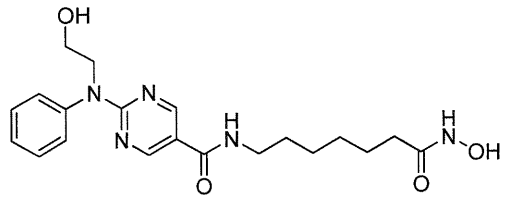
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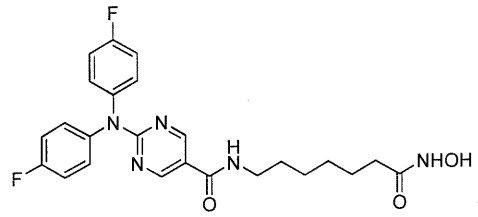


or pharmaceutically acceptable salts thereof.

2. A pharmaceutical composition comprising a compound of claim 1, or a pharmaceutically acceptable salt thereof, together with a pharmaceutically acceptable carrier.

3. A compound of claim 1, or a pharmaceutically acceptable salt thereof, for use in a method of selectively inhibiting HDAC6 over other HDACs in a subject, wherein the compound is for administering to the subject.

4. Compound for the use of claim 3, wherein the compound has a selectivity for HDAC6 of 5 to 1000 fold.

5. Compound for the use of claim 3, wherein the compound has a selectivity for HDAC6 when tested in a HDAC enzyme assay of about 5 to 1000 fold.

6. A compound of claim 1, or a pharmaceutically acceptable salt thereof, for use in a method of treating a disease mediated by HDAC-6 in a subject, wherein the compound is for administering to the subject.

7. Compound for the use of claim 6, wherein the disease is cancer or a proliferation disease.

8. Compound for the use of claim 7, wherein the disease is lung cancer, colon cancer, breast cancer, prostate cancer, liver cancer, pancreas cancer, brain cancer, kidney cancer, ovarian cancer, stomach cancer, skin cancer, bone cancer, gastric cancer, breast cancer, pancreatic cancer, glioma, gliobastoma, hepatocellular carcinoma, papillary renal carcinoma, head and neck squamous cell carcinoma, leukemias, lymphomas, myelomas, and solid tumors.

9. Compound for the use of claim 7, wherein the cancer is multiple myeloma.

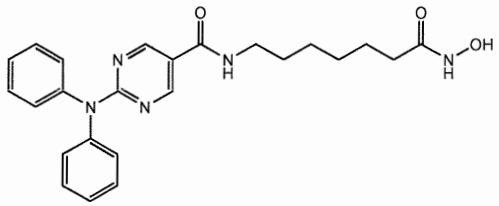
10. Compound for the use of claim 6, wherein the disease is Wilson's disease, spinocerebellar ataxia, prion disease, Parkinson's disease, Huntington's disease, amytrophic lateral sclerosis, amyloidosis, Alzheimer's disease, Alexander's disease, alcoholic liver disease, cystic fibrosis, Pick's Disease, spinal muscular dystrophy or Lewy body dementia.

11. Compound for the use of claim 6, wherein the disease is rheumatoid arthritis, osteoarthritis; rheumatoid spondylitis; psoriasis; post ischemic perfusion injury; inflammatory bowel disease; chronic inflammatory pulmonary disease, eczema, asthma, psoriasis, ischemia/reperfusion injury, ulcerative colitis, acute respiratory distress syndrome, psoriatic arthritis, infectious arthritis, progressive chronic arthritis, deforming arthritis, osteoarthritis, traumatic arthritis, gouty arthritis, Reiter's syndrome, polychondritis, acute synovitis and spondylitis, glomerulonephritis, hemolytic anemia, aplasic anemia, idiopathic thrombocytopenia, neutropenia, ulcerative colitis, Crohn's disease, host versus graft disease, allograft rejection, chronic thyroiditis, Graves' disease, schleroderma, diabetes, active hepatitis, primary binary cirrhosis, myasthenia gravis, multiple sclerosis (MS), systemic lupus erythematosus, atopic dermatitis, contact dermatitis, skin sunburns, chronic renal insufficiency, Stevens-Johnson syndrome, idiopathic sprue, sarcoidosis, Guillain-Barre syndrome, uveitis, conjunctivitis, keratoconjunctivitis, otitis media, periodontal disease, pulmonary interstitial fibrosis, asthma, bronchitis, rhinitis, sinusitis, pneumoconiosis, pulmonary insufficiency syndrome, pulmonary emphysema, pulmonary fibrosis, silicosis, or chronic inflammatory pulmonary disease.

12. A compound of claim 1, or a pharmaceutically acceptable salt thereof for use in a method of treating a subject suffering from or susceptible to multiple myeloma, wherein the compound is for administration in a therapeutically effective amount to thereby treat the subject in need thereof.

13. Compound for the use of any one of claims 6 to 12, wherein the subject is human.

14. A compound of claim 1, wherein the compound is selected from:



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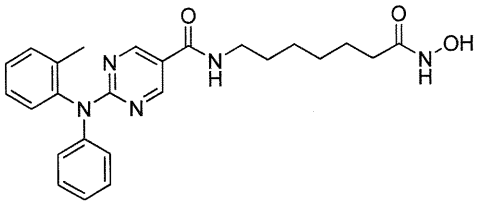

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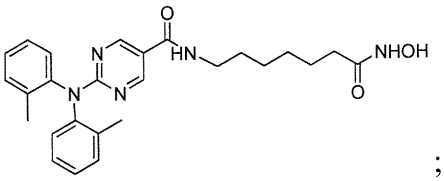

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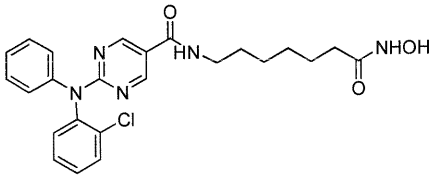

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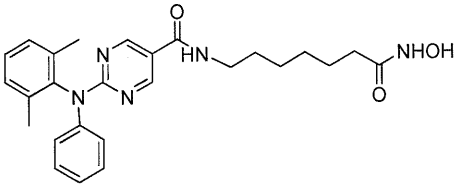

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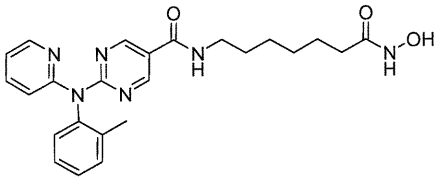

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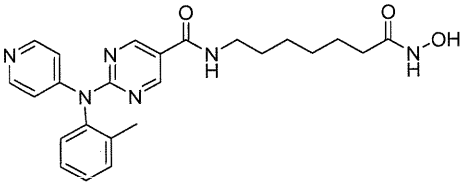

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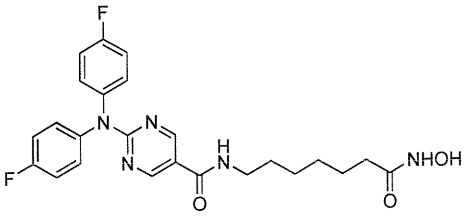
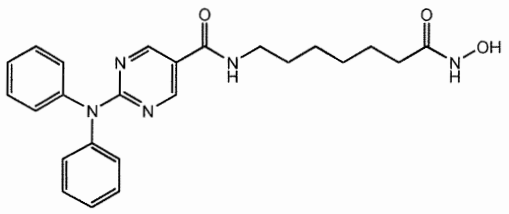


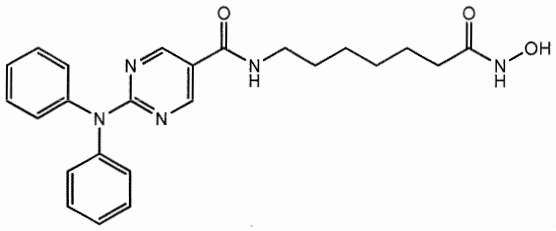
or a pharmaceutically acceptable salt thereof.

15. The compound

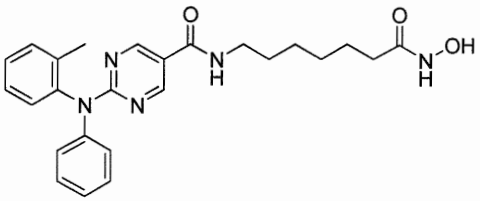


or a pharmaceutically acceptable salt thereof.

16. The compound

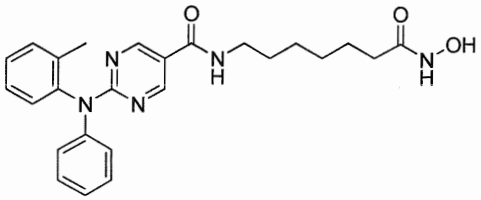


17. The compound

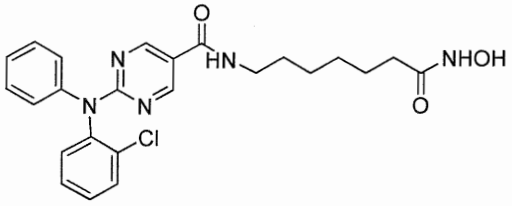


or a pharmaceutically acceptable salt thereof.

18. The compound

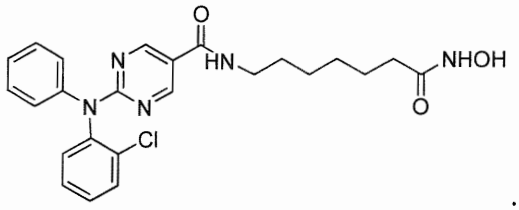


19. The compound

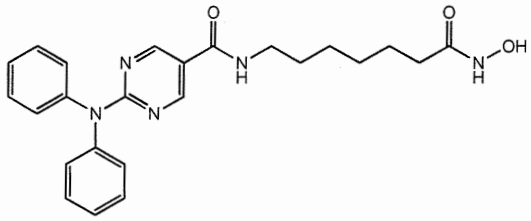


or a pharmaceutically acceptable salt thereof.

20. The compound

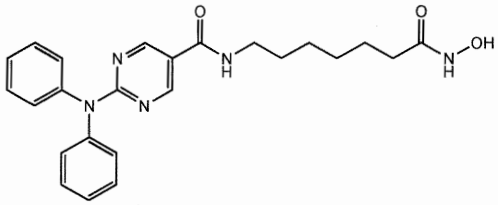


21. A pharmaceutical composition comprising the compound



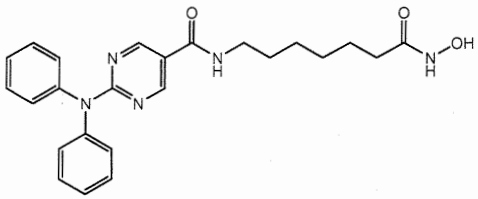
or a pharmaceutically acceptable salt thereof, together with a pharmaceutically acceptable carrier.

22. A pharmaceutical composition comprising the compound



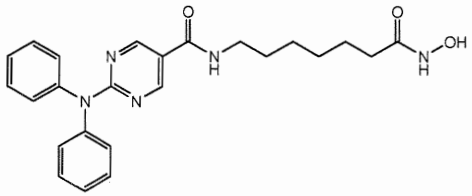
together with a pharmaceutically acceptable carrier.

23. The compound:



or a pharmaceutically acceptable salt thereof, for use in a method of treating multiple myeloma in a subject, wherein the compound is for administering to the subject.

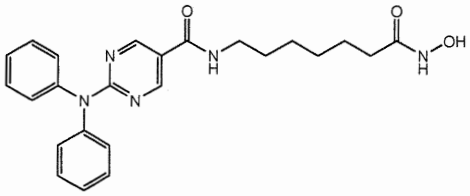
24. The compound:



or a pharmaceutically acceptable salt thereof, for use in a method of treating multiple myeloma in a subject, wherein the compound is for administering to the subject.

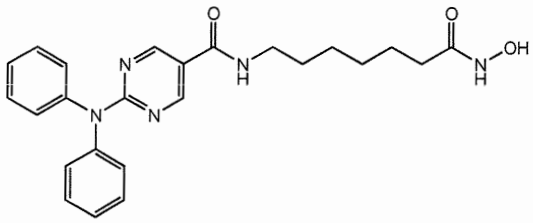
25. Use of a compound according to claim 1 or a pharmaceutically acceptable salt thereof, for the preparation of a pharmaceutical composition for treating a subject suffering from or susceptible to multiple myeloma.

26. Use of the compound:



or a pharmaceutically acceptable salt thereof, for the preparation of a pharmaceutical composition for treating a subject suffering from or susceptible to multiple myeloma.

27. Use of the compound:



or a pharmaceutically acceptable salt thereof, for the preparation of a pharmaceutical composition for treating a subject suffering from or susceptible to multiple myeloma.