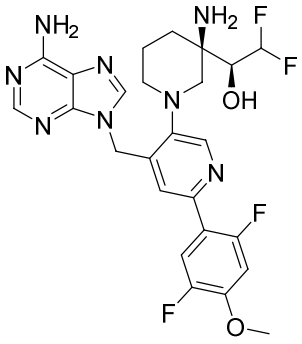
compositions of such compounds, having desirable properties for commercial production, would be beneficial to patients suffering from an NSD2-related disease or condition.

[0005] The present invention addresses the foregoing needs and provides other related advantages.

SUMMARY

[0006] The disclosure provides pharmaceutical compositions comprising a piperidinyl-methyl-purine amine and their use for inhibiting NSD2 and treating a disease or condition, such as cancer. In particular, one aspect of the disclosure provides a pharmaceutical composition, comprising:

(a) at least 10% w/w of a compound of Formula I, wherein Formula I is represented by:



or a pharmaceutically acceptable salt thereof;

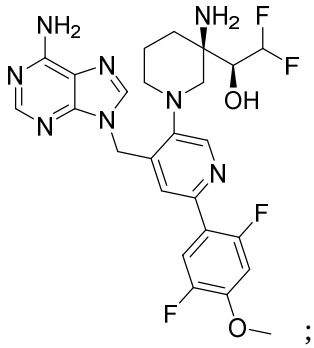
(b) at least 40% w/w microcrystalline cellulose;

(c) at least 10% w/w pregelatinized starch;

(d) at least 2% w/w croscarmellose or a pharmaceutically acceptable salt thereof; and

(e) at least 0.75% w/w stearic acid or a pharmaceutically acceptable salt thereof.

[0007] Further description of additional pharmaceutical compostions are described in the detailed description. For example, another aspect of the disclosure provides a pharmaceutical composition, comprising:

(a) from 17% w/w to 25% w/w of a compound of Formula I, wherein Formula I is a D-tartaric acid salt of  ;

(b) from 51% to 56% w/w microcrystalline cellulose;

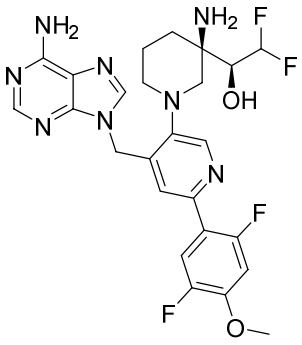
(c) about 20% w/w pregelatinized starch;

(d) about 4% w/w croscarmellose sodium; and

(e) about 1.5% w/w magnesium stearate.

[0008] Yet another aspect of the disclosure provides a pharmaceutical composition, comprising:

(a) at least 10% w/w of a compound of Formula I, wherein Formula I is represented by:

 or a pharmaceutically acceptable salt thereof; and

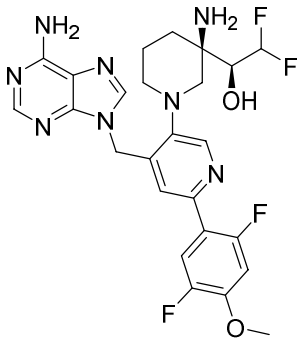
(b) at least 60% w/w of a diluent selected from microcrystalline cellulose, pregelatinized starch, or a combination thereof.

[0009] Another example of the disclosure provides a tablet for oral administration, wherein the tablet comprises a pharmaceutical composition described herein. Another aspect of the disclosure provides a tablet for oral administration, comprising a pharmaceutical composition as described herein.

[0010] Another aspect of the disclosure provides a method of preparing a pharmaceutical composition, comprising the steps of:

(i) providing a first mixture comprising:

(a) at least 10% w/w of a compound of Formula I, wherein Formula I is represented by:



or a pharmaceutically acceptable salt thereof;

(b) at least 40% w/w microcrystalline cellulose;

(c) at least 10% w/w pregelatinized starch;

(d) at least 2% w/w croscarmellose or a pharmaceutically acceptable salt thereof; and

(e) at least 0.75% w/w stearic acid or a pharmaceutically acceptable salt thereof;

(ii) subjecting the first mixture to roller compaction to produce a compacted mixture; and

(iii) subjecting the compacted mixture to compressive force to produce a compressed pharmaceutical composition.

[0011] Another example of the disclosure provides a pharmaceutical composition prepared according to the aforementioned method.

[0012] Another example of the disclosure provides a method of treating a disease or condition mediated by NSD2 in a subject. The method comprises administering a therapeutically effective amount of a pharmaceutical composition described herein to a subject in need thereof to treat the disease or condition, as further described in the detailed description. Another aspect of the disclosure provides use of a pharmaceutical composition as described herein in the manufacture of a medicament for treating a disease or condition mediated by nuclear SET domain-containing protein 2 (NSD2).

[0013] Another example of the disclosure provides a method of inhibiting the activity of nuclear SET domain-containing protein 2 (NSD2). The method comprises contacting a NSD2 with an effective amount of a pharmaceutical composition described herein, as further described in the detailed description. Another aspect of the disclosure provides use of a pharmaceutical composition as described herein in the manufacture of a medicament for inhibiting the activity of nuclear SET domain-containing protein 2 (NSD2).

DETAILED DESCRIPTION

[0014] The invention provides pharmaceutical compositions comprising a piperidinyl-methyl-purine amine and their use for inhibiting NSD2 and treating a disease or condition, such as cancer. The practice of the present invention employs, unless otherwise indicated, conventional techniques of organic chemistry, pharmacology, molecular biology (including recombinant