

n is 0, 1, or 2;

R³ is alkyl, carbocyclyl, carbocyclylalkyl, heterocyclyl, or heterocyclylalkyl;

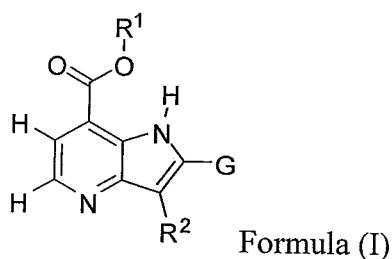
R⁴ is halogen, alkyl, alkoxy, carbocyclyl, heterocyclyl, aryl, heteroaryl, or X-R⁵;

wherein:

X is -(C₁-C₆)alkylene-, -O-, -S-, or -NR¹-; and

R⁵ is carbocyclyl, heterocyclyl, aryl, or heteroaryl.

[0004a] One embodiment provides a compound having the structure of Formula (I),

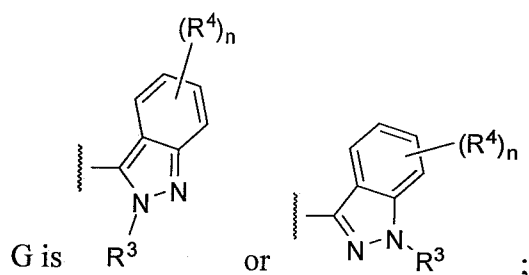


or a pharmaceutically acceptable salt thereof,

wherein,

R¹ is hydrogen or alkyl;

R² is hydrogen, halogen or alkyl;



n is 0, 1, or 2;

R³ is optional substituted alkyl, carbocyclyl, carbocyclylalkyl, heterocyclyl, or heterocyclylalkyl;

R⁴ is halogen, optional substituted alkyl, optional substituted alkoxy, carbocyclyl, heterocyclyl, aryl, optional substituted heteroaryl, or X-R⁵;

wherein:

X is -(C₁-C₆)alkylene-, -O-, -S-, or -NR¹-; and

R⁵ is carbocyclyl, heterocyclyl, optional substituted aryl, or heteroaryl.

[0005] One embodiment provides a pharmaceutical composition comprising a compound of Formula (I), or a pharmaceutically acceptable salt thereof, and at least one pharmaceutically acceptable excipient.

[0006] One embodiment provides a method for inhibiting a histone demethylase enzyme comprising contacting the histone demethylase enzyme with a compound of Formula (I).

[0007] One embodiment provides a method for treating cancer in subject in need thereof comprising administering to the subject a composition comprising a compound of Formula (I) or a pharmaceutically acceptable salt thereof.

[0007a] One embodiment provides use of a composition comprising a compound as described herein, or pharmaceutically acceptable salt thereof, in the manufacture of a medicament for treating cancer in a subject in need thereof.

[0007b] One embodiment provides use of a composition comprising a compound as disclosed herein, or pharmaceutically acceptable salt thereof, in the manufacture of a medicament for treating esophagus or breast cancer in a subject in need thereof.

[0007c] One embodiment provides a method for inhibiting a histone demethylase enzyme *in vitro* comprising contacting the histone demethylase enzyme with a compound as disclosed herein.

INCORPORATION BY REFERENCE

[0008] All publications, patents, and patent applications mentioned in this specification are herein incorporated by reference to the same extent as if each individual publication, patent, or patent application was specifically and individually indicated to be incorporated by reference.

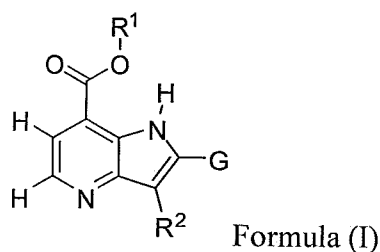
DETAILED DESCRIPTION OF THE INVENTION

[0009] As used herein and in the appended claims, the singular forms "a," "and," and "the" include plural referents unless the context clearly dictates otherwise. Thus, for example, reference to "an agent" includes a plurality of such agents, and reference to "the cell" includes reference to one or more cells (or to a plurality of cells) and equivalents thereof known to those skilled in the art, and so forth. When ranges are used herein for physical properties, such as molecular weight, or chemical properties, such as chemical formulae, all combinations and subcombinations of ranges and specific embodiments therein are intended to be included. The term "about" when referring to a number or a numerical range means that the number or numerical range referred to is an approximation within experimental variability (or within statistical experimental error), and thus the number or numerical range may vary between 1% and 15% of the stated number or numerical range. The term "comprising" (and related terms such as "comprise" or "comprises" or "having" or "including") is not intended to exclude that in other certain embodiments, for example, an embodiment of any composition of matter,

CLAIMS

We Claim:

1. A compound having the structure of Formula (I),

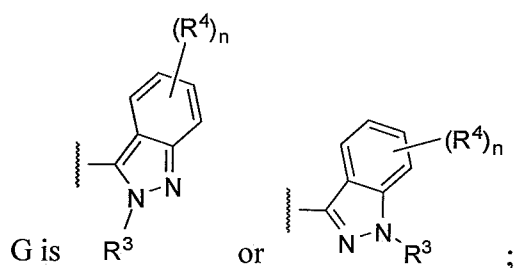


or a pharmaceutically acceptable salt thereof,

wherein,

R^1 is hydrogen or alkyl;

R^2 is hydrogen, halogen or alkyl;



n is 0, 1, or 2;

R^3 is optional substituted alkyl, carbocyclyl, carbocyclylalkyl, heterocyclyl, or heterocyclylalkyl;

R^4 is halogen, optional substituted alkyl, optional substituted alkoxy, carbocyclyl, heterocyclyl, aryl, optional substituted heteroaryl, or $X-R^5$;

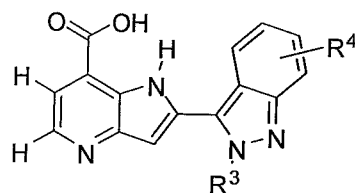
wherein:

X is $-(C_1-C_6)$ alkylene-, $-O-$, $-S-$, or $-NR^1-$; and

R^5 is carbocyclyl, heterocyclyl, optional substituted aryl, or heteroaryl.

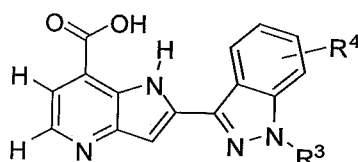
2. The compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein R^1 is hydrogen.
3. The compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein R^1 is alkyl.
4. The compound of claim 3, or a pharmaceutically acceptable salt thereof, wherein R^1 is methyl.

5. The compound of any one of claims 1-4, or a pharmaceutically acceptable salt thereof, wherein R^2 is hydrogen.
6. The compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein the compound of Formula (I) is of Formula (Ia):



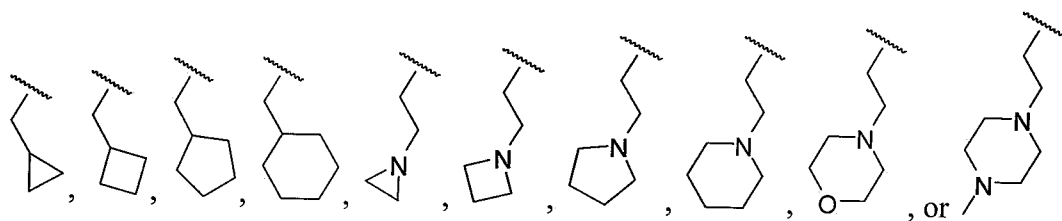
Formula (Ia).

7. The compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein the compound of Formula (I) is of Formula (Ib):



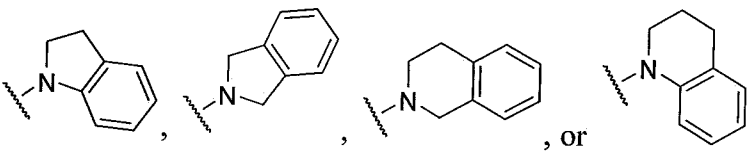
Formula (Ib).

8. The compound of any one of claims 1-7, or a pharmaceutically acceptable salt thereof, wherein R^3 is optional substituted alkyl.
9. The compound of claim 8, or a pharmaceutically acceptable salt thereof, wherein R^3 is optional substituted methyl.
10. The compound of any one of claims 1-7, or a pharmaceutically acceptable salt thereof, wherein R^3 is alkyl substituted with at least one halogen.
11. The compound of any one of claims 1-7, or a pharmaceutically acceptable salt thereof, wherein R^3 is carbocyclalkyl or heterocyclalkyl.
12. The compound of claim 11, or a pharmaceutically acceptable salt thereof, wherein R^3 is selected from a group consisting of:



13. The compound of any one of claims 1-12, or a pharmaceutically acceptable salt thereof, wherein R^4 is halogen.

14. The compound of claim 13, or a pharmaceutically acceptable salt thereof, wherein R^4 is chloro or fluoro.
15. The compound of any one of claims 1-12, or a pharmaceutically acceptable salt thereof, wherein R^4 is alkyl substituted with at least one halogen.
16. The compound of claim 15, or a pharmaceutically acceptable salt thereof, wherein R^4 is - CF_3 .
17. The compound of any one of claims 1-12, or a pharmaceutically acceptable salt thereof, wherein R^4 is alkoxy.
18. The compound of claim 17, or a pharmaceutically acceptable salt thereof, wherein R^4 is optional substituted methoxy.
19. The compound of any one of claims 1-12, or a pharmaceutically acceptable salt thereof, wherein R^4 is alkoxy substituted with at least one halogen.
20. The compound of claim 19, or a pharmaceutically acceptable salt thereof, wherein R^4 is - OCF_3 .
21. The compound of any one of claims 1-12, or a pharmaceutically acceptable salt thereof, wherein R^4 is carbocyclyl.
22. The compound of any one of claims 1-12, or a pharmaceutically acceptable salt thereof, wherein R^4 is heterocyclyl.
23. The compound of claim 22, or a pharmaceutically acceptable salt thereof, wherein the heterocyclyl is selected from a group consisting of:


24. The compound of any one of claims 1-12, or a pharmaceutically acceptable salt thereof, wherein R^4 is $X-R^5$.
25. The compound of claim 24, or a pharmaceutically acceptable salt thereof, wherein X is -O-.
26. The compound of claim 24, or a pharmaceutically acceptable salt thereof, wherein X is -S-.
27. The compound of claim 24, or a pharmaceutically acceptable salt thereof, wherein X is - NR^1 -; and R^1 is methyl.

28. The compound of any one of claims 24-27, or a pharmaceutically acceptable salt thereof, wherein R⁵ is optional substituted aryl.
29. The compound of claim 28, or a pharmaceutically acceptable salt thereof, wherein the aryl is phenyl optionally substituted with halogen, -CN, alkyl, alkynyl, alkoxy, or carbocycle.
30. The compound of any one of claims 24-27, or a pharmaceutically acceptable salt thereof, wherein R⁵ is optional substituted heteroaryl.
31. The compound of claim 30, or a pharmaceutically acceptable salt thereof, wherein the heteroaryl is pyridinyl optionally substituted with halogen, -CN, alkyl, alkynyl, alkoxy, or carbocycle
32. A pharmaceutical composition comprising a compound of any of the preceding claims, or a pharmaceutically acceptable salt thereof, and at least one pharmaceutically acceptable excipient.
33. A method for inhibiting a histone demethylase enzyme *in vitro* comprising contacting the histone demethylase enzyme with a compound of any of the preceding claims.
34. Use of a composition comprising a compound of any of the preceding claims, or pharmaceutically acceptable salt thereof, in the manufacture of a medicament for treating esophagus or breast cancer in a subject in need thereof