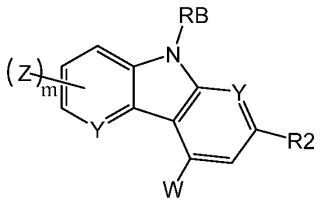
WHAT IS CLAIMED IS:

1. A method of treating cancer in a patient comprising the step of administering to said patient at least one compound of formula I:



I

or a salt or a prodrug thereof,

wherein:

each Y is independently selected from N and CH;

m is an integer from 0 to 3 (or 0 to 4 when Y is CH in the ring comprising substituent Z);

Z is each time independently selected from:

-CN

-C(O)OR1,

-C(O)N(R1)R3,

-C(O)R1, or

-heteroaryl optionally substituted with one or more RA or R4 substituents,

-aryl optionally substituted with one or more RA or R4 substituents,

wherein, when (R1) and R3 are attached to a nitrogen atom, optionally they join together with the nitrogen atom to form a 3 to 7-membered ring which optionally includes one or more other heteroatom selected from N, O and S, optionally the ring is substituted with one or more RA or R4;

W is

-CN,

-N(R1)R3,

-C(O)OR1,

-C(O)N(R1)R3,

-NR1C(O)R1,

-NR1C(O)OR1,

-OC(O)N(R1)R3,

-OC(O)R1,

-C(O)R1,

-NR1C(O)N(R1)R3,

-NR1S(O)$_2$R1,

-benzyl optionally substituted with 1, 2 or 3 RA or R1 substituents,

-X-L-(X-L)n – N(R1)R3,

-X-L-(X-L)n – heteroaryl optionally substituted with one or more RA or R4 substituents attached on either or both the L and heteroaryl groups,

-X-L-(X-L)n – heterocyclyl optionally substituted with one or more RA or R4 substituents attached on either or both the L and heterocyclyl groups,

-X-L-(X-L)n- aryl optionally substituted with one or more RA or R4 substituents,

-X-L-(X-L)$_n$-NR1RA,

-(N(R1)-L)$_n$ – N$^+$R1R3R5 R6$^-$ or

- halogen;

wherein n is an integer equal to either 0, 1, 2, 3, 4, or 5,

and wherein, when R1 and R3 are attached to a nitrogen atom, optionally they join together with the nitrogen atom to form a 3 to 7-membered ring which optionally includes one or more other heteroatom selected from N, O and S, optionally the ring is substituted with one or more RA or R4;

each X is independently selected from CH_2, O, S and NR1;

each L is independently

-C$_{1-6}$ alkylene,

-C$_{2-6}$ alkenylene,

-C$_{2-6}$ alkynylene,

-C$_{3-7}$cycloalkylene, which optionally includes one or more other heteroatom selected from N, O and S or

-C$_{3-7}$ cycloalkenylene, which optionally includes one or more other heteroatom selected from N, O and S

wherein the alkylene, the alkenylene, the alkynylene the cycloalkylene and the cycloalkenylene groups are each independently optionally substituted with one or two R4 or RA substituent;

R1 is each independently

-H,

-C$_{1-6}$ alkyl,

-C$_{2-6}$ alkenyl,

-C$_{2-6}$ alkynyl,

-C_{3-7} cycloalkyl,
-C_{3-7} cycloalkenyl,
-C_{1-5} perfluorinated alkyl,
-heterocyclyl,
-aryl,
-heteroaryl,or
-benzyl,

wherein the alkyl, the alkenyl, the alkynyl, the cycloalkenyl, the perfluorinated alkyl, the heterocyclyl, the aryl, the heteroaryl and the benzyl groups are each independently optionally substituted with 1, 2 or 3 RA or Rd substituents;

R2 is

-H,
-C_{1-6} alkyl, optionally substituted with one more RA substituents,
-C(O)R4,
-L-heteroaryl optionally substituted with one or more RA or R4 substituents,
-L-heterocyclyl optionally substituted with one or more RA or R4, or
-L-aryl optionally substituted with one or more RA or R4 substituents,
-N(R1)aryl optionally substituted with one or more RA or R4 substituents

R3 is each independently

-H,
-C_{1-6} alkyl,
-C_{2-6} alkenyl,
-C_{2-6} alkynyl,
-C_{3-7} cycloalkyl,
-C_{3-7} cycloalkenyl,
-C_{1-5} perfluorinated alkyl,
-heterocyclyl,
-aryl,
-heteroaryl,
-benzyl, or
methyl 2-benzyl-9H-pyrido[2',3':4,5]pyrrolo[2,3-d]pyrimidine-7-carboxylate-4-yl,

wherein the alkyl, the alkenyl, the alkynyl, the cycloalkyl, the cycloalkenyl, the perfluorinated alkyl, the heterocyclyl, the aryl, the heteroaryl and the benzyl groups are each independently optionally substituted with 1, 2 or 3 RA or Rd substituents;

R4 is each independently

-H,

-C_{1-6} alkyl,

-C_{1-6} haloalkyl,

-C_{2-6} alkenyl,

-C_{2-6} alkynyl,

-C_{3-7} cycloalkyl,

-C_{3-7} cycloalkenyl,

-C_{1-5} perfluorinated alkyl,

-heterocyclyl,

-aryl,

-heteroaryl, or

-benzyl,

wherein the alkyl, the alkenyl, the alkynyl, the cycloalkyl, the cycloalkenyl, the perfluorinated alkyl, the heterocyclyl, the aryl, the heteroaryl and the benzyl groups are each independently optionally substituted with 1, 2 or 3 RA or Rd substituents;

R5 is each independently

-C_{1-6} alkyl,

-C_{1-6} alkylene-C_{2-6} alkenyl which optionally includes one or more other heteroatom selected from N, O and S

-C_{1-6} alkylene-C_{2-6} alkynyl which optionally includes one or more other heteroatom selected from N, O and S

-L-aryl which optionally includes one or more RA or R4 substituents

-L-heteroaryl which optionally includes one or more RA or R4 substituents

-C_{1-6} alkylene-C(O)O-

-C_{1-6} alkylene-C(O)OR1

-C_{1-6} alkylene-CN

-C_{1-6} alkylene-C(O)NR1R3, wherein R1 and R3 optionally they join together with the nitrogen atom to form a 3 to 7-membered ring which optionally includes one or more other heteroatom selected from N, O and S; or

-C_{1-6} alkylene-OH;

R6 is

-Halogen

-$OC(O)CF_3$ or

-OC(O)R1;

RA is each independently

-halogen,

-CF_3,

-OR1,

-L-OR1,

-OCF_3,

-SR1,

-CN,

-NO_2,

-NR1R3,

-L-NR1R1,

-C(O)OR1,

-$S(O)_2$R4

-C(O)N(R1)R3,

-NR1C(O)R1,

-NR1C(O)OR1,

-OC(O)N(R1)R3,

-OC(O)R1,

-C(O)R4,

-NHC(O)N(R1)R3,

-NR1C(O)N(R1)R3,

-N_3; or

-$(CH_2CH_2O)_2$-CH_2CH_2OH;

wherein R1 and R3 optionally they join together with the nitrogen atom to form a 3 to 7-membered ring which optionally includes one or more other heteroatom selected from N, O and S; and

Rd is each independently

-H,

-C_{1-6} alkyl,

-C_{2-6} alkenyl,

-C_{2-6} alkynyl,

-C_{3-7} cycloalkyl,

-C_{3-7} cycloalkenyl,

-C_{1-5} perfluorinated alkyl

-benzyl or

-heterocyclyl;

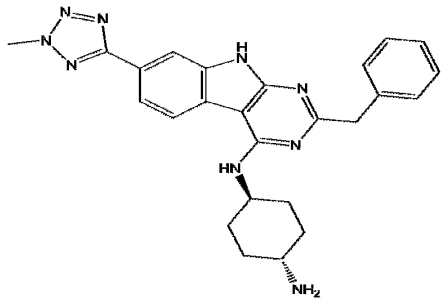
RB is

-H, or

-C_{1-6} alkyl;

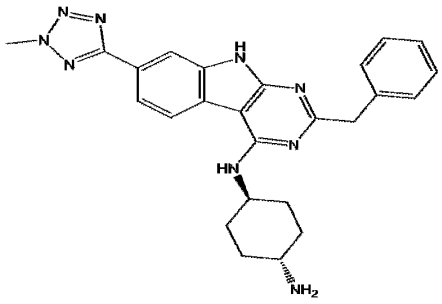
optionally together with at least one cell expanding factor.

2. The method of claim 1, wherein the compound of formula I is

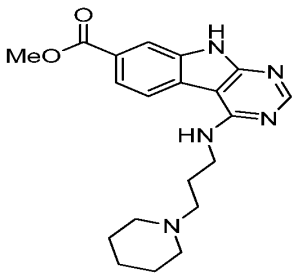


or a pharmaceutically acceptable salt thereof.

3. The method of claim 1, wherein the compound of formula I is a hydrobromide salt of



4. The method of claim 1, wherein the compound of formula I is



or a pharmaceutically acceptable salt thereof.

5. The method of claim 1, wherein the compound of formula I is as defined herein, such as in Table 3 hereinor a pharmaceutically acceptable salt thereof.

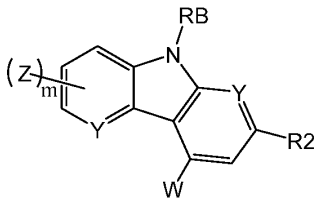
6. The method of any one of claims 1-5, wherein said patient is a human or an animal.

7. The method of claim 6, wherein said animal is a mouse.

8. The method of any one of claims 1-7, wherein said compound is formulated for an administration orally, intramuscularly, intravenously or subcutaneously.

9. The method of any one of claims 1-8, wherein the compound degrades at least one of LSD1, RCOR1, HDAC2 and CoREST.

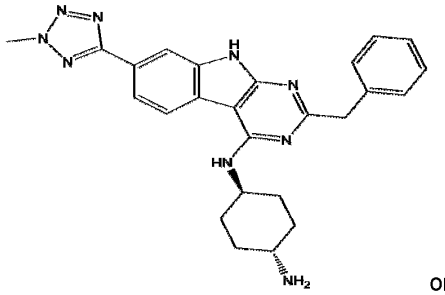
10. A compound of formula I:



I

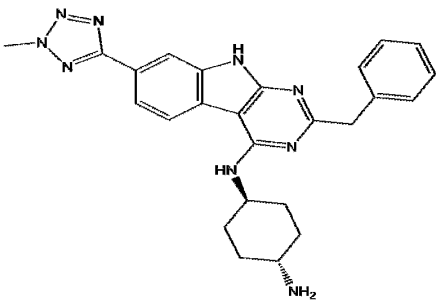
or a salt or a prodrug thereof,
wherein W, Y, Z, R2, RB and m are as defined in claim 1,
for treating cancer.

11. The compound for treating cancer of claim 10, wherein the compound of formula I is UM171

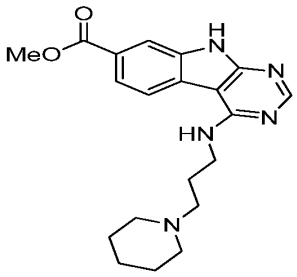


or a pharmaceutically acceptable salt thereof.

12. The compound for treating cancer of claim 10, wherein the compound of formula I is a hydrobromide salt of



13. The compound for treating cancer of claim 10, wherein the compound of formula I is



or a pharmaceutically acceptable salt thereof.

14. The compound for treating cancer of claim 10, wherein the compound of formula I is as defined in table 3, or a pharmaceutically acceptable salt thereof.

15. The compound for treating cancer of any one of claims 10-14, wherein said compound is formulated for an administration orally, intramuscularly, intravenously or subcutaneously.

16. The compound for treating cancer of any one of claims 10-15, wherein the compound degrades at least one of LSD1, RCOR1, HDAC2 and CoREST.

17. The method of any one of claims 1-9, or the compound of any one of claims 10-16, wherein said cancer is a cancer based on a K27 mutation, EZH2 mutation or PRC2 mutation.

18. A method of inhibiting proliferation of cancerous cells *ex vivo* comprising administering the compound of any one of claims 1-9 in to the medium containing the

cells in proliferation, wherein the compound has anantineoplastic on the proliferation of the cancerous cells.