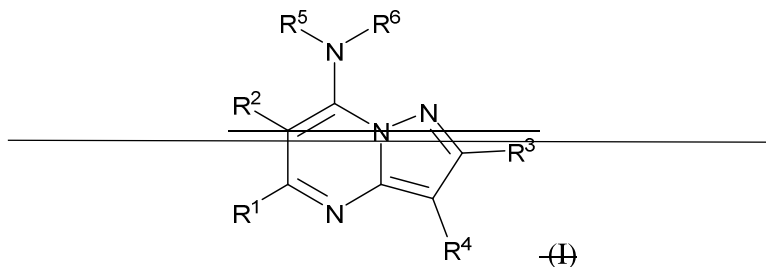


CLAIMS:

1. A compound of formula (I)



5

or a pharmaceutically acceptable salt thereof, wherein:

R^1 is C1-C6 alkyl, C3-C6 cycloalkyl, tetrahydrofuranyl, or tetrahydropyranyl,

optionally substituted at any position with one or more of D, halo, $R^7CO_2R^8$,

CO_2R^8 , CO_2H , R^7CO_2H , NH_2 , NHR^8 , OH , OR^8 , SH , SR^8 , $NHCOR^8$,

10

$NHSO_2R^8$, SO_2NH_2 , SO_2NHR^8 ;

or R^1 is NH_2 , NHR^8 , OH , OR^8 , $NHCOR^8$, $NHSO_2R^8$, SO_2NH_2 , SO_2NHR^8 ;

or R^1 and R^2 together form a fused C5-C6 cycloaryl, optionally substituted at

any position with one or more of D, halo, NH_2 , NHR^8 , NR^7R^8 , OH ,

OR^8 , SH , SR^8 , $NHCOR^8$, $NHSO_2R^8$, SO_2NH_2 , or SO_2NHR^8 ;

15

R^2 , R^3 , R^4 and R^5 are independently H, D, halo, or C1-C5 alkyl or C3-C6 cycloalkyl

optionally substituted at any position with one or more of D, halo, NH_2 ,

NHR^8 , NR^7R^8 , OH , OR^8 , SH , SR^8 , $NHCOR^8$, $NHSO_2R^8$, SO_2NH_2 , or

SO_2NHR^8 ;

or R^3 and R^4 together form a fused C5-C6 cycloaryl, optionally substituted at

20

any position with one or more of D, halo, NH_2 , NHR^8 , NR^7R^8 , OH ,

OR^8 , SH , SR^8 , $NHCOR^8$, $NHSO_2R^8$, SO_2NH_2 , or SO_2NHR^8 ;

or R^2 and R^5 together form a fused C5-C6 cycloaryl, optionally substituted at

any position with one or more of D, halo, NH_2 , NHR^8 , NR^7R^8 , OH ,

OR^8 , SH , SR^8 , $NHCOR^8$, $NHSO_2R^8$, SO_2NH_2 , or SO_2NHR^8 ;

25

R^6 is H or D;

R^7 is $(CH_2)_n$, wherein n is an integer from 1 to 6; and

R^8 is C1-C6 alkyl or C3-C6 cycloalkyl, optionally substituted at any position with one

or more of D, halo, OH , SH , or NH_2 .

30 2. The compound or salt thereof of claim 1, wherein

~~R¹ is C1-C6 alkyl or C3-C6 cycloalkyl, optionally substituted at any position with~~

~~NH₂, or~~

~~R¹ is NHCOR⁸;~~

~~R², R³, R⁴, and R⁶ are H;~~

5 ~~R⁵ is cyclobutyl, cyclopentyl, or cyclohexyl, optionally substituted at any position with D, NH₂, OH, NHR⁸, OR⁸, or combinations thereof; and~~

~~R⁸ is C1-C4 alkyl.~~

3. ~~The compound or salt thereof of claim 1, wherein~~

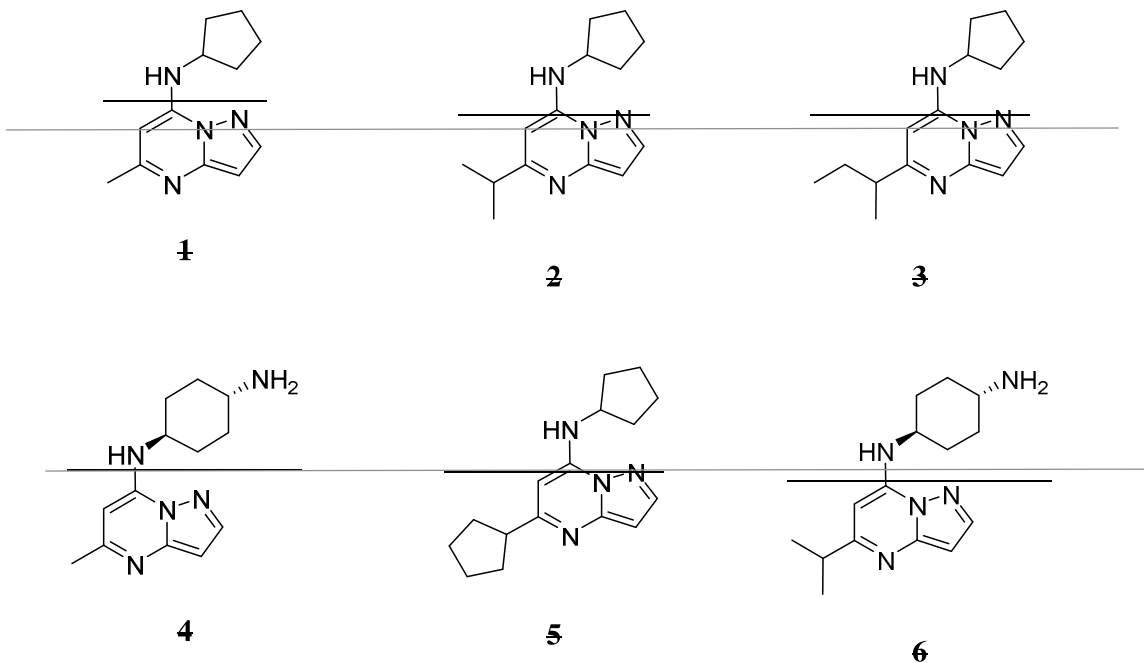
10 ~~R¹ is methyl, ethyl, isopropyl, sec-butyl, 3-pentyl, cyclopropyl, cyclopentyl, or NHCOCH₃;~~

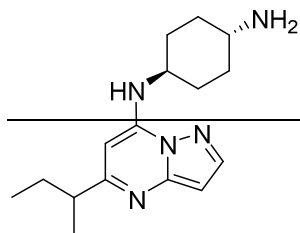
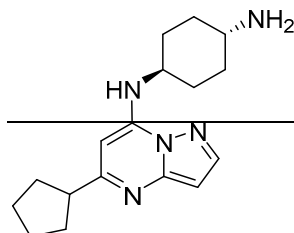
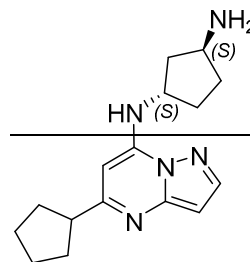
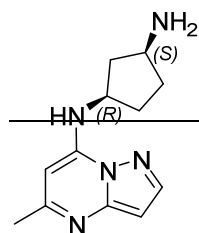
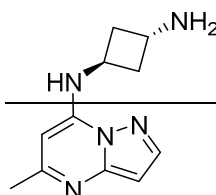
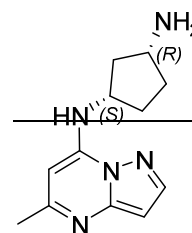
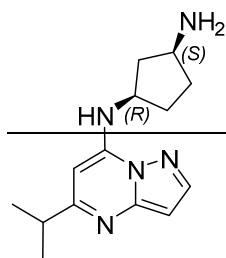
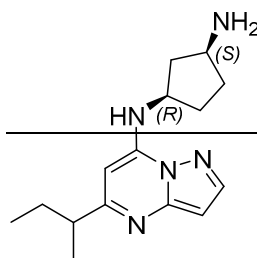
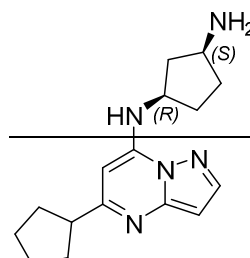
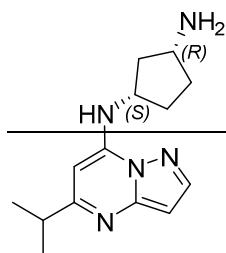
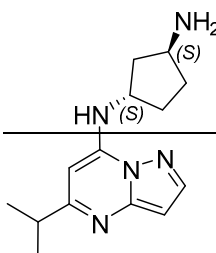
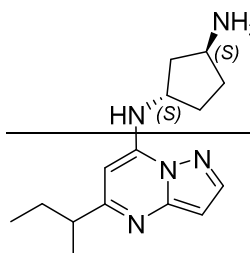
~~R², R³, R⁴, and R⁶ are H; and~~

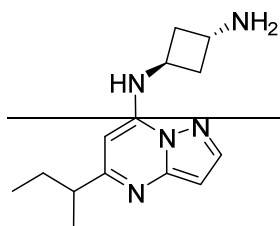
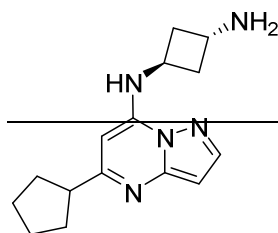
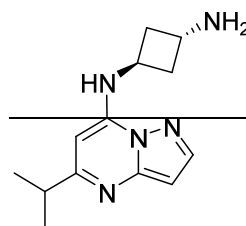
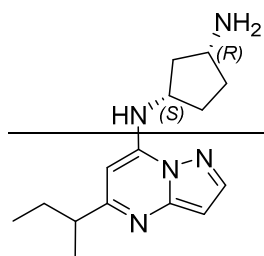
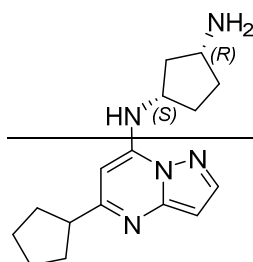
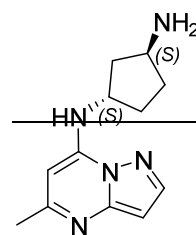
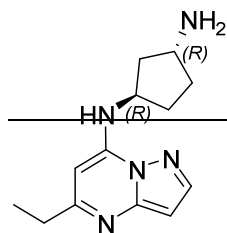
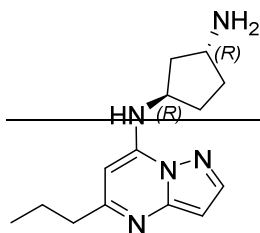
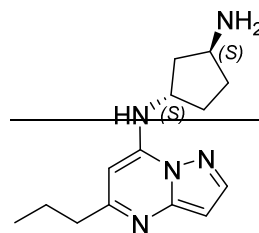
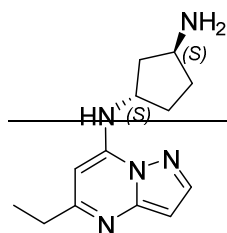
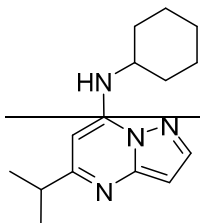
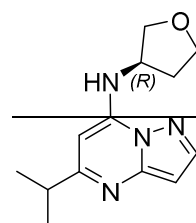
~~R⁵ is cyclobutyl, cyclopentyl, or cyclohexyl, optionally substituted at any position with NH₂;~~

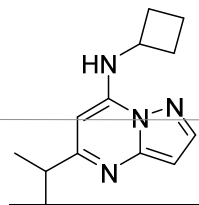
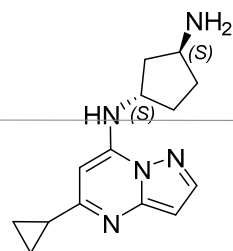
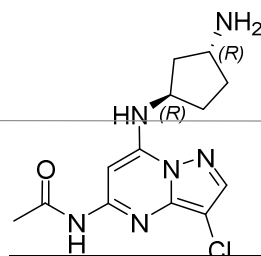
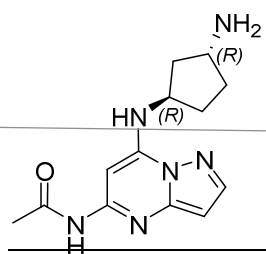
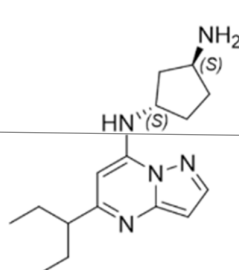
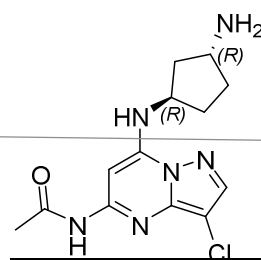
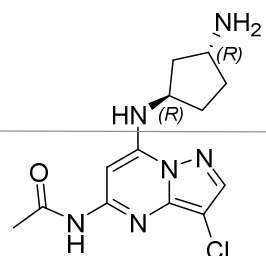
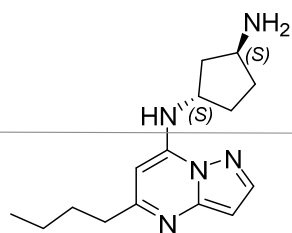
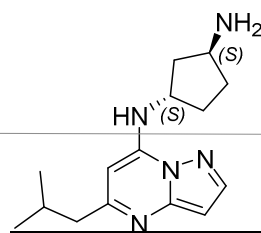
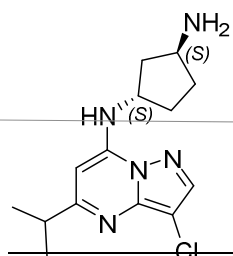
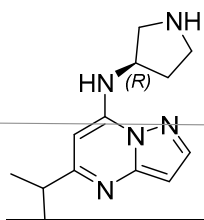
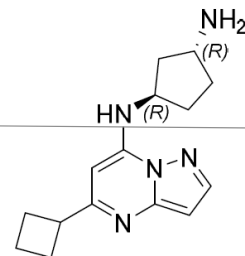
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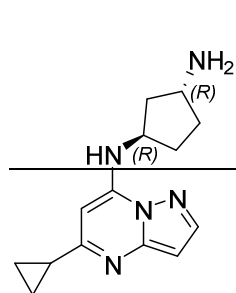
4. A compound of one of the following structures or a pharmaceutically acceptable salt thereof:



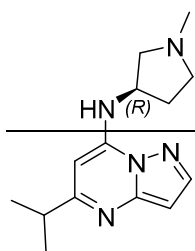
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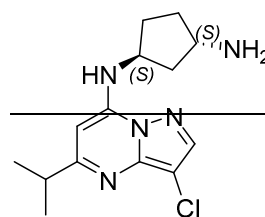
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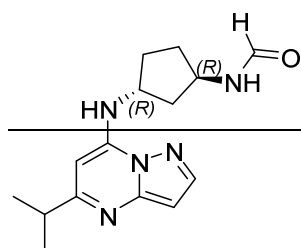
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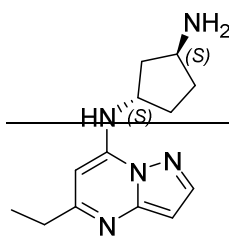
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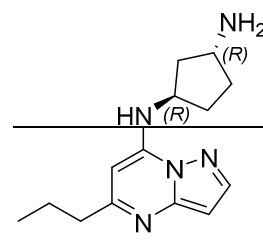
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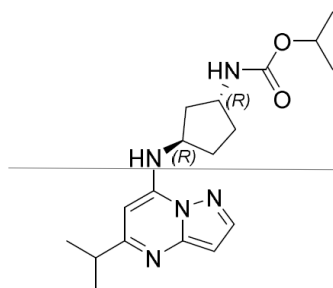
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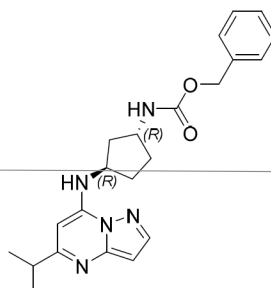
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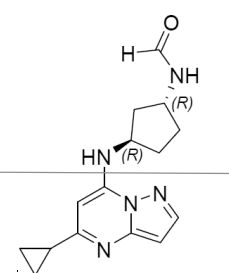
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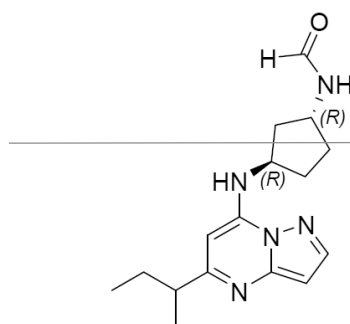
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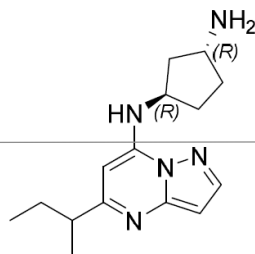
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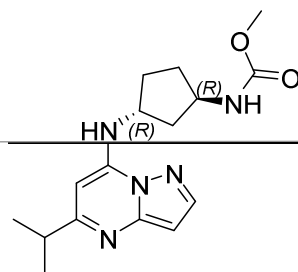
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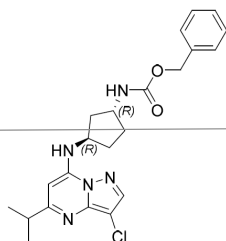
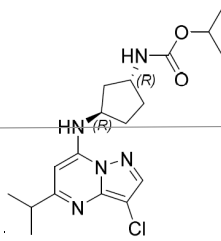
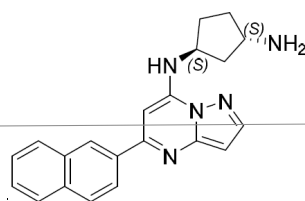
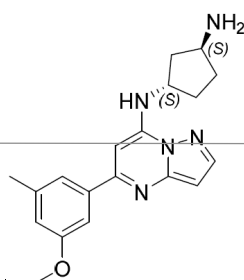
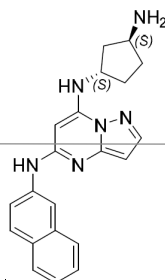
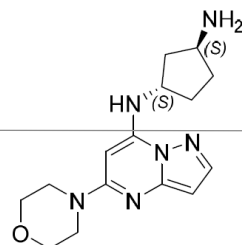
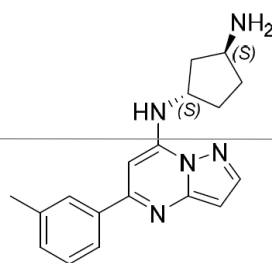
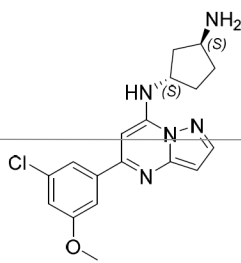
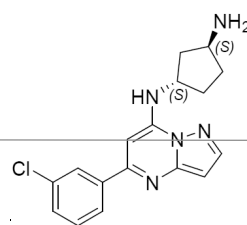
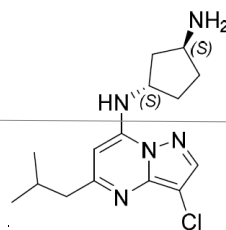
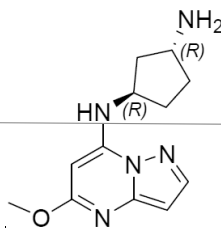
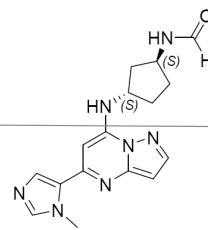
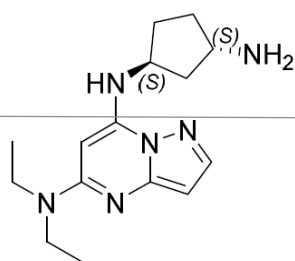
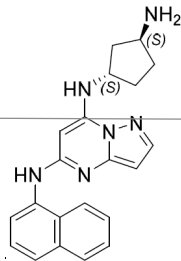
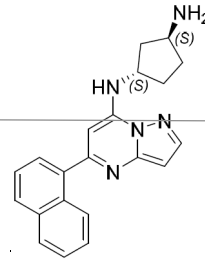


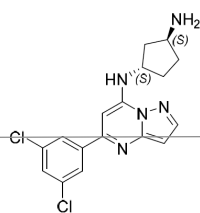
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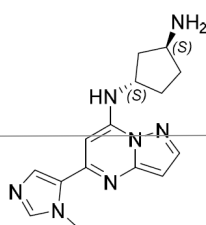
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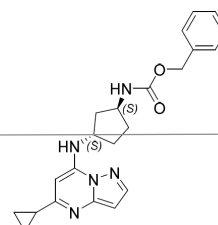
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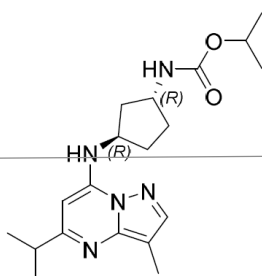
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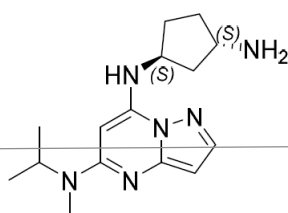
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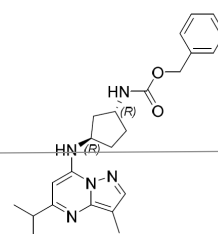
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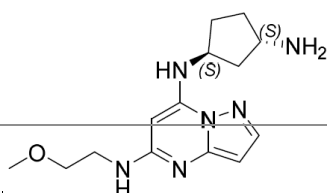
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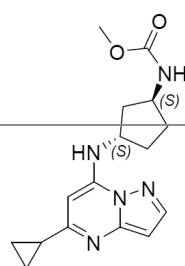
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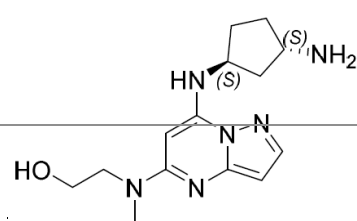
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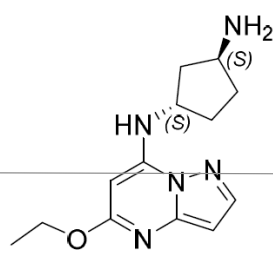
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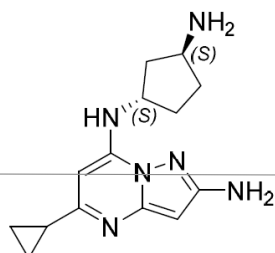
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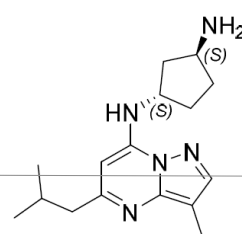
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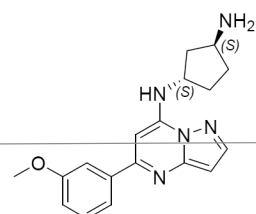
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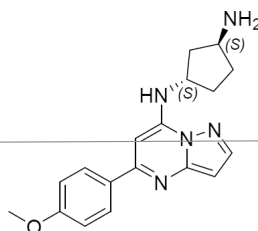
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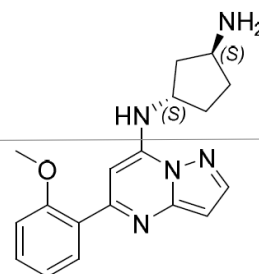
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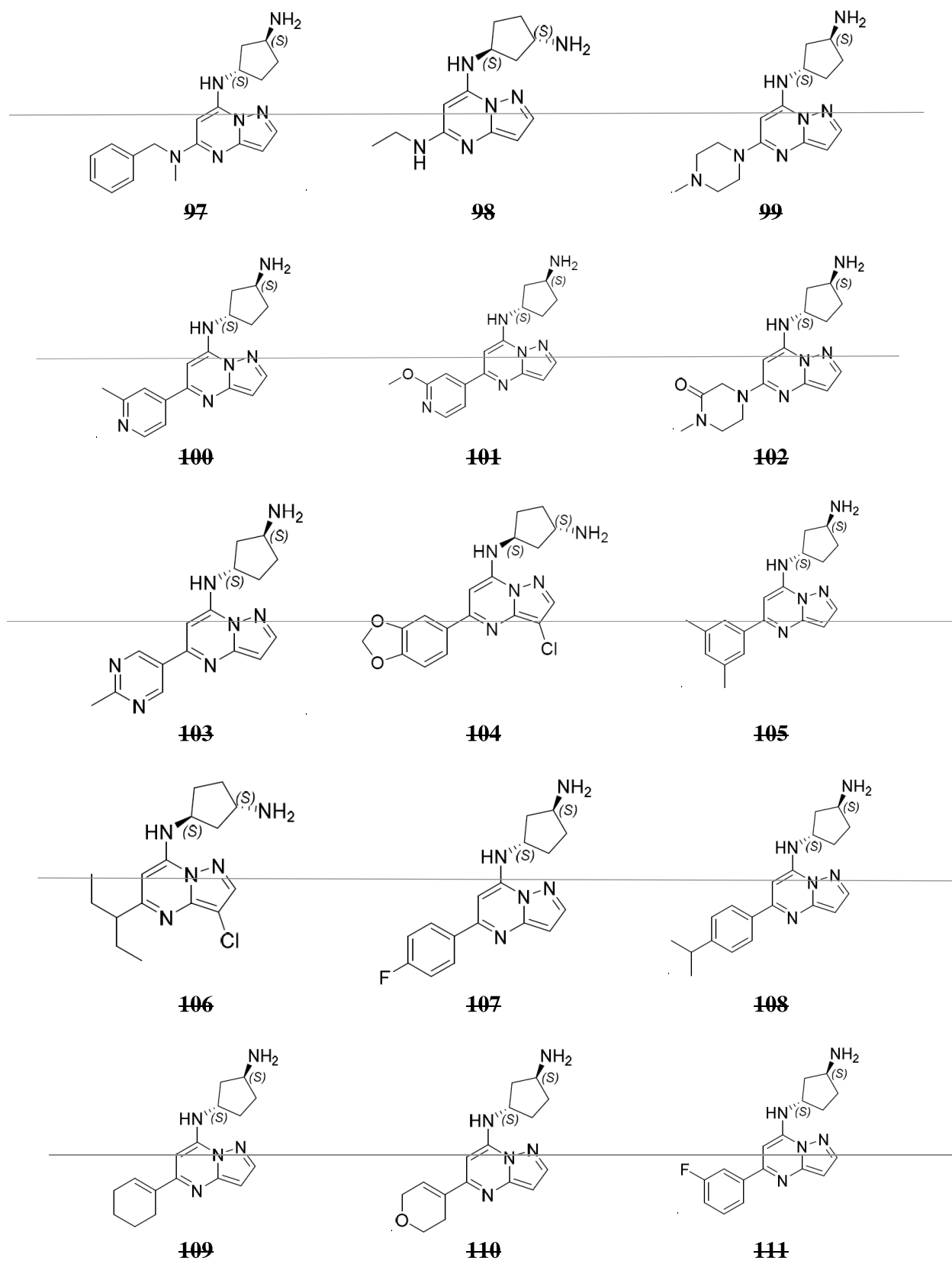
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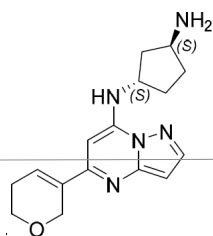
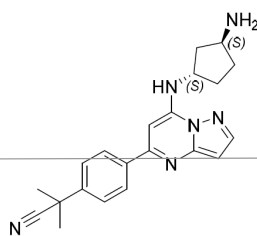
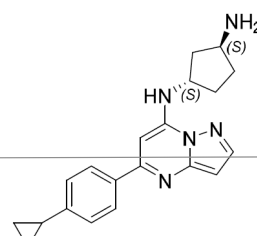
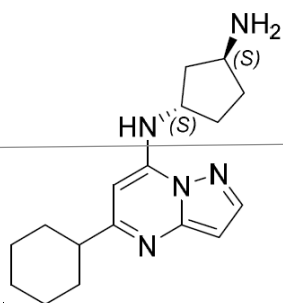
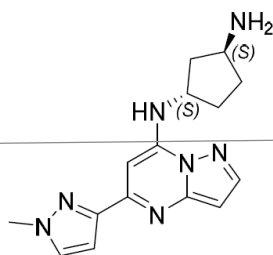
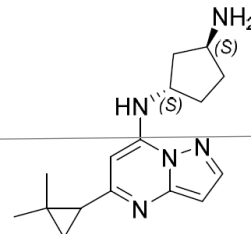
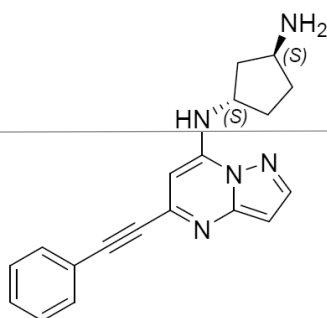
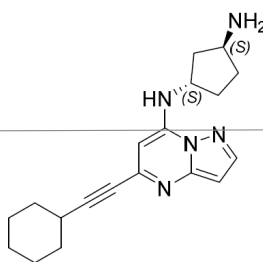
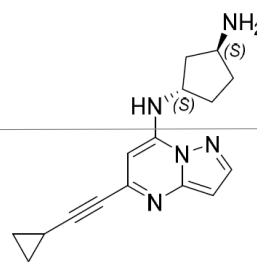
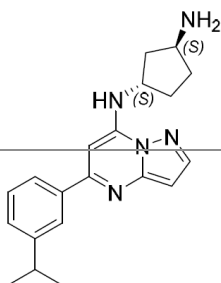
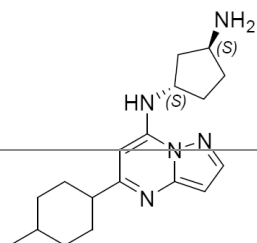
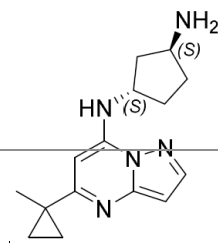
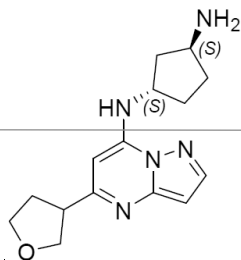
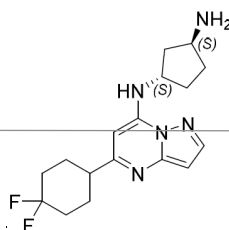
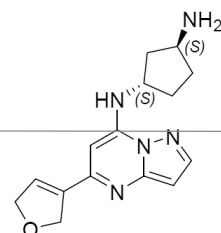


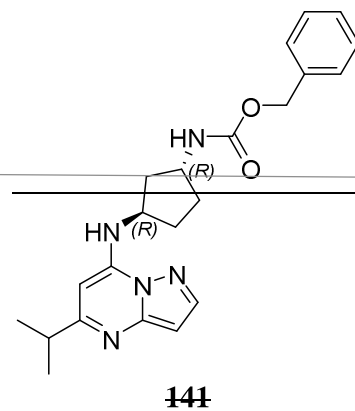
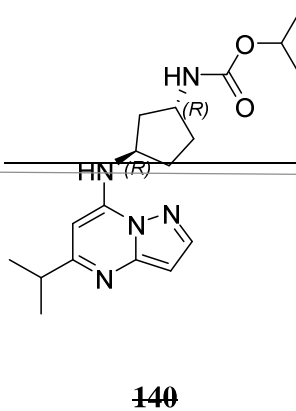
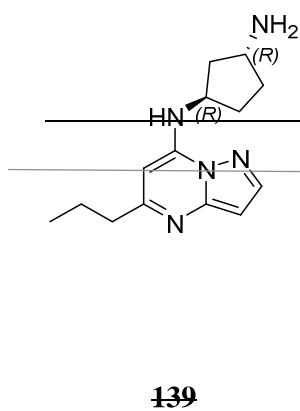
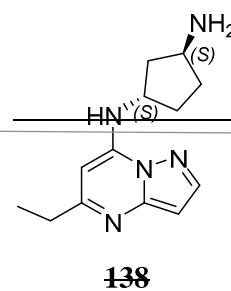
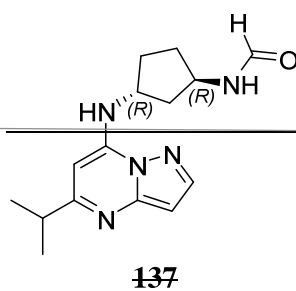
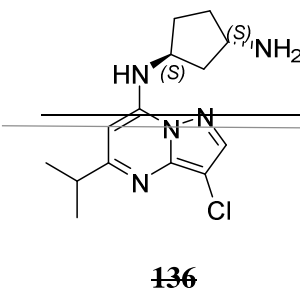
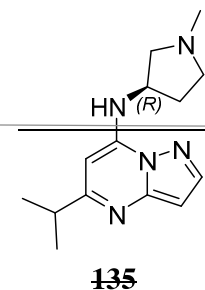
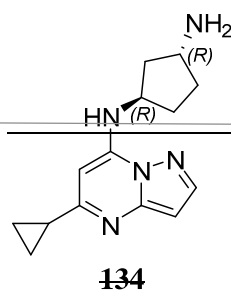
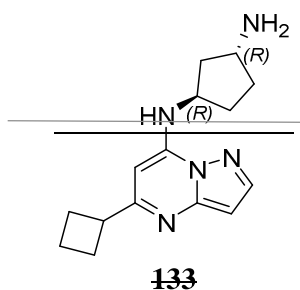
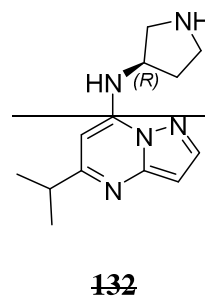
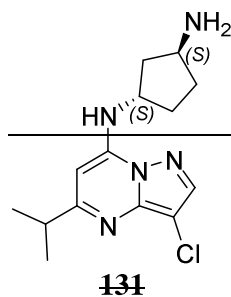
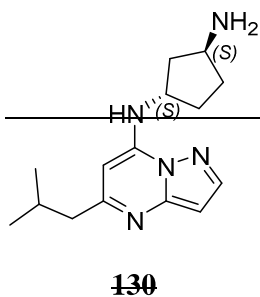
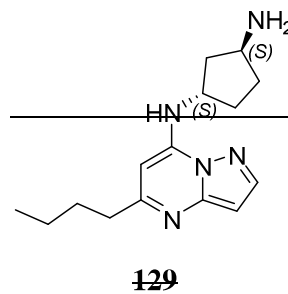
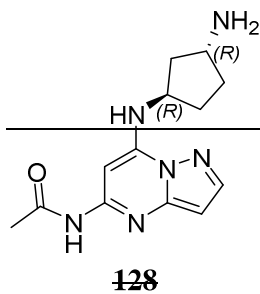
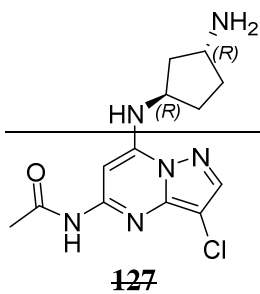
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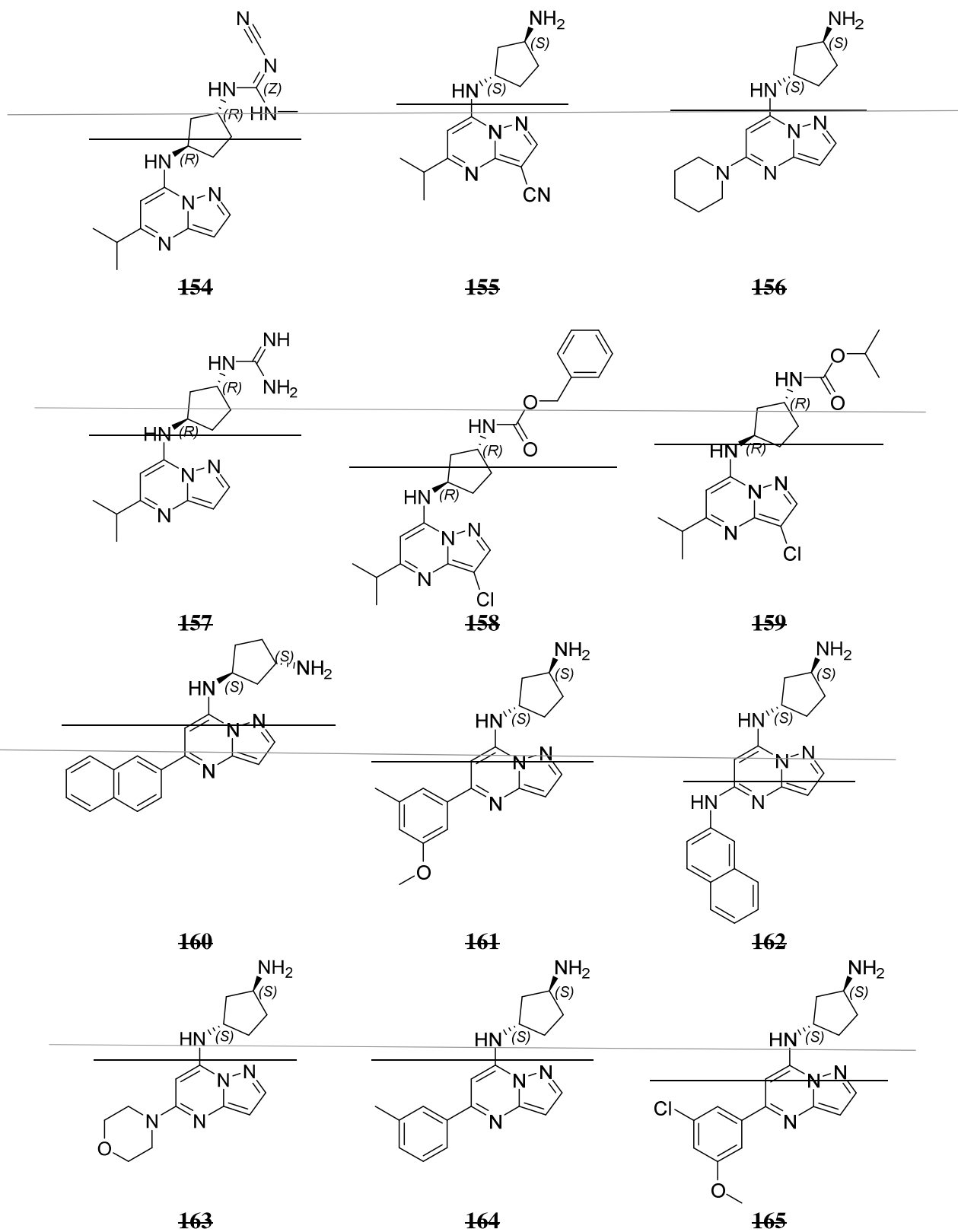
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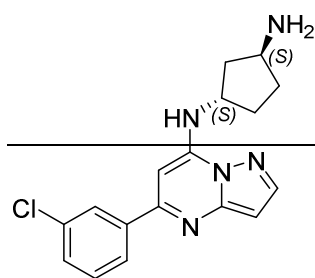
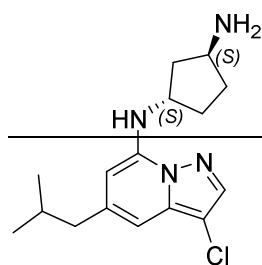
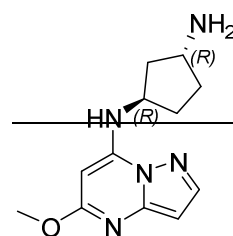
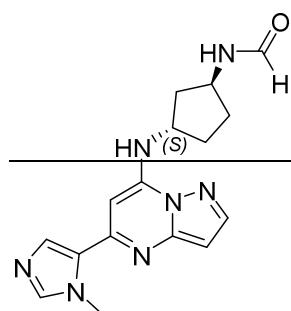
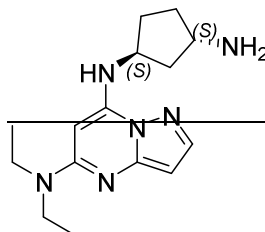
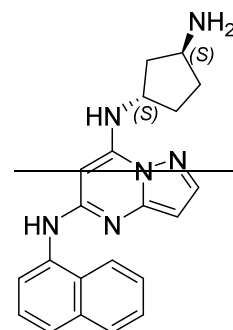
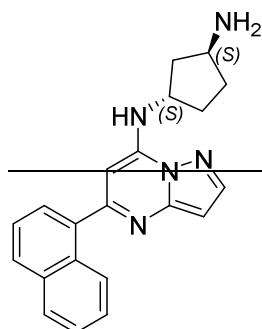
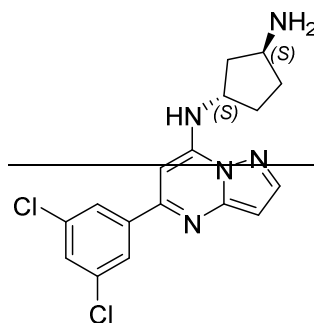
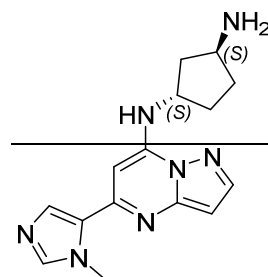
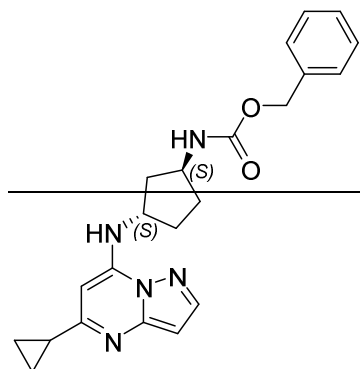
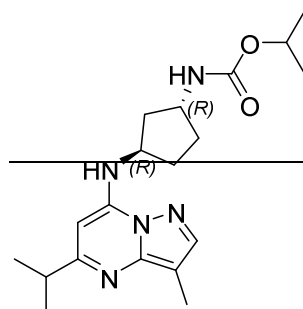
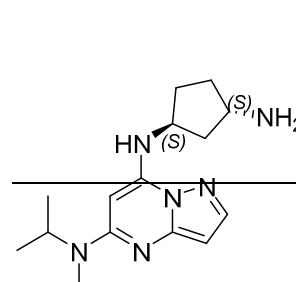


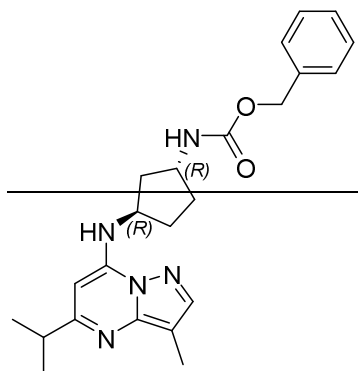
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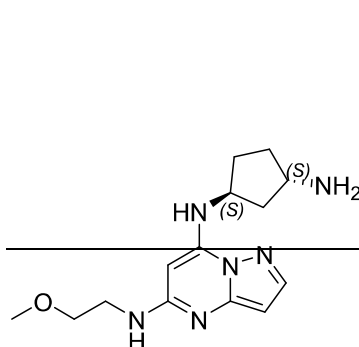




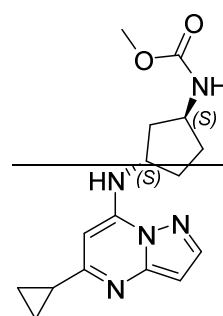
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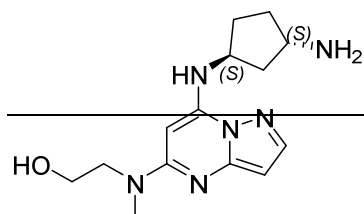
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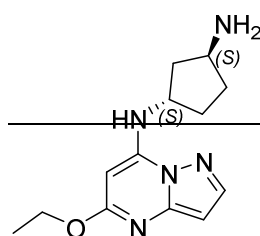
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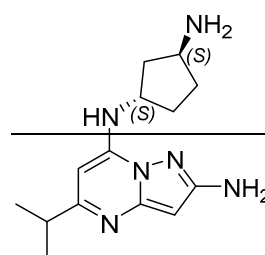
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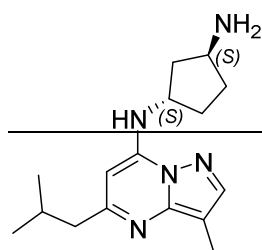
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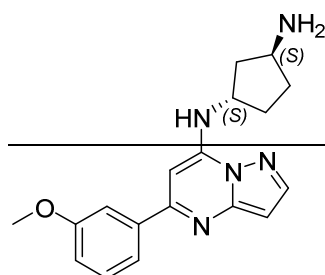
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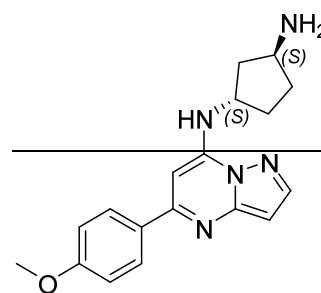
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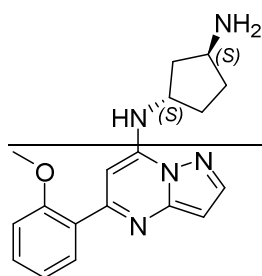
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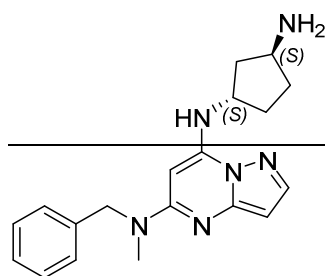
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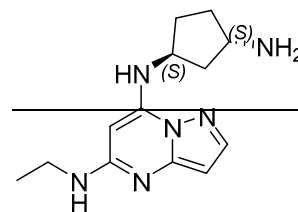
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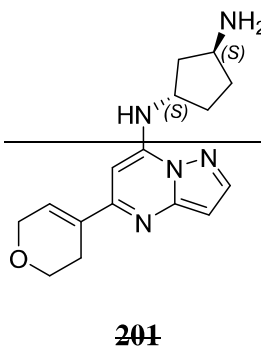
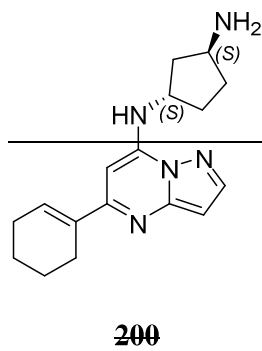
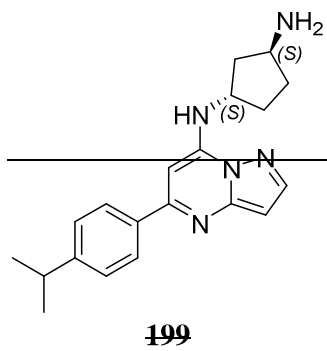
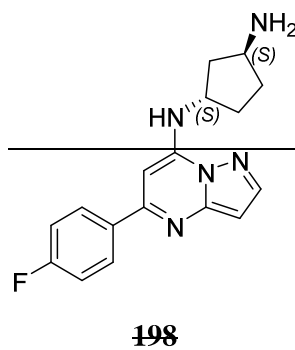
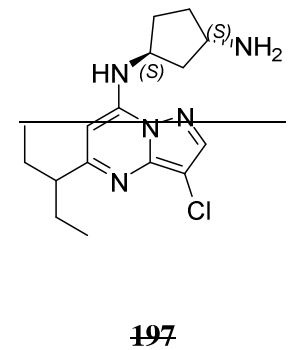
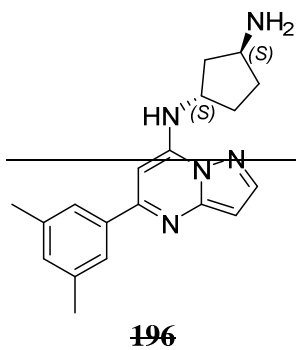
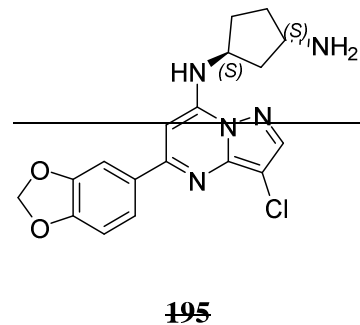
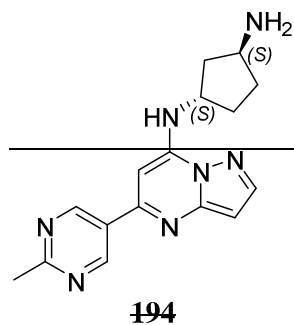
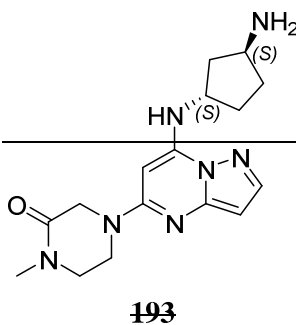
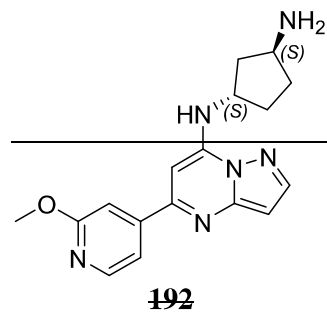
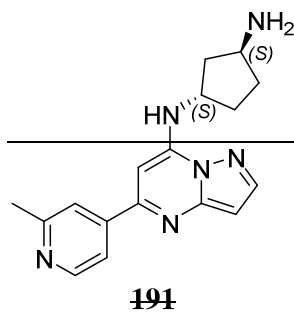
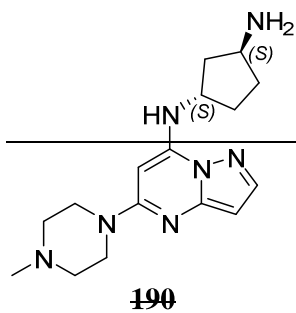
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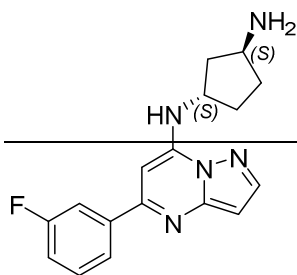
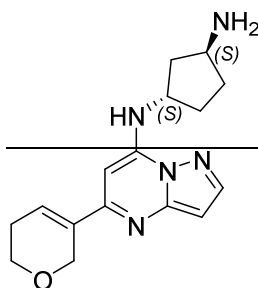
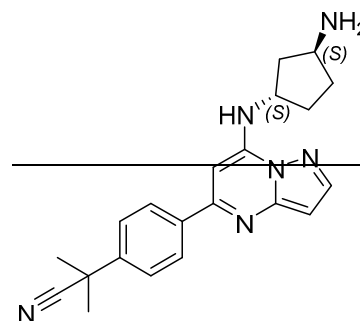
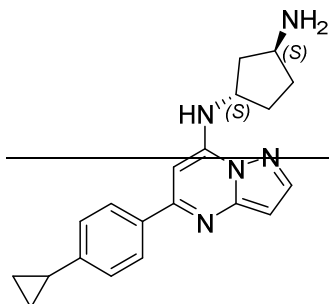
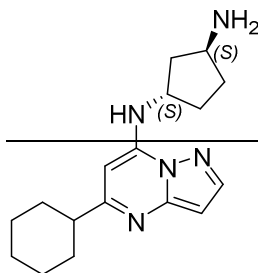
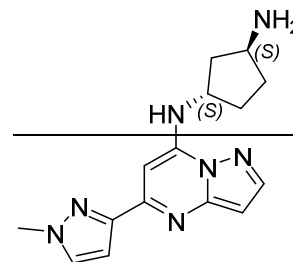
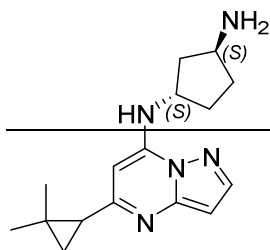


188



189



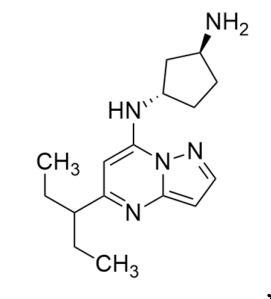
**202****203****204****205****206****207****208**

5. The compound or salt of any one of claims 1 to 4, wherein the compound or salt is a racemic or non-racemic mixture of optically active stereoisomers.
- 5 6. The compound or salt of any one of claims 1 to 4, wherein the compound or salt is a substantially pure single enantiomer or diastereomer.
7. The compound or salt of any one of claims 1 to 6 as a dichloride salt.
- 10 8. A composition comprising a compound or salt of any one of claims 1 to 7 and a pharmaceutically acceptable carrier.
9. A method of treating a CDK9 mediated disease, comprising administering to a subject in need thereof a compound according to any of claims 1 to 7 or a composition according to
- 15 claim 8.

10. The method of claim 9, wherein the disease is a cancer caused by aberrant expression of MYC or MCL 1, a hematologic malignancy, or a solid tumor.

11. The method of claim 9, wherein the disease is acute myelogenous leukemia, primary peritoneal carcinoma, chronic lymphocytic leukemia, relapsed multiple myeloma, non-Hodgkin's lymphoma, acute lymphoblastic leukemia, acute myeloid leukemia, advanced breast cancer, non-small cell lung cancer, or liver cancer.

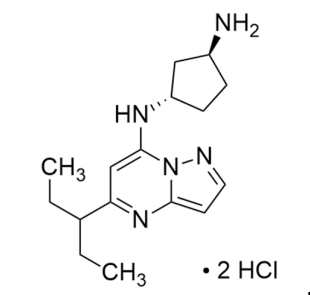
1. A compound:



or a pharmaceutically acceptable salt thereof.

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

3. A compound:



4. A pharmaceutical composition comprising a pharmaceutically acceptable carrier and the compound of claim 3.

5. The compound of claim 1 for use in treating a CDK9-mediated disease in a patient.

6. The compound of claim 5, wherein the CDK9-mediated disease is a cancer caused by aberrant expression of MYC- or MCL-1, a hematologic malignancy, or a solid tumor.
- 5 7. The compound of claim 6, wherein the CDK9-mediated disease is acute myelogenous leukemia, primary peritoneal carcinoma, chronic lymphocytic leukemia, relapsed multiple myeloma, non-Hodgkin's lymphoma, acute lymphoblastic leukemia, acute biphenotypic leukemia, advanced breast cancer, non-small cell lung cancer, or liver cancer.
- 10 8. The compound of claim 3 for use in treating a CDK9-mediated disease in a patient.
9. The compound of claim 8, wherein the CDK9-mediated disease is a cancer caused by aberrant expression of MYC- or MCL-1, a hematologic malignancy, or a solid tumor.
- 15 10. The compound of claim 9, wherein the CDK9-mediated disease is acute myelogenous leukemia, primary peritoneal carcinoma, chronic lymphocytic leukemia, relapsed multiple myeloma, non-Hodgkin's lymphoma, acute lymphoblastic leukemia, acute biphenotypic leukemia, advanced breast cancer, non-small cell lung cancer, or liver cancer.

20