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C07D 513/04 (2006.01)

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(73)	Proprietor	Gilead Sciences, Inc., 333 Lakeside Drive, Foster City, CA 94404, US-USA
(72)	Inventor	BABAOGU, Kerim, 2209 Wentz Church Road, Lansdale, Pennsylvania 19446, US-USA BOOJAMRA, Constantine, G., 1 Worth Street, San FranciscoCalifornia 94114, US-USA EISENBERG, Eugene, J., 236 Club Drive, San CarlosCalifornia 94070, US-USA HUI, Hon Chung, 853 Woodside Way229, San MateoCalifornia 94401, US-USA MACKMAN, Richard, L., 360 Ashton Avenue, MilbraeCalifornia 94030, US-USA PARRISH, Jay, P., 760 Bair Island Road106, Redwood CityCalifornia 94063, US-USA SANGI, Michael, 7 College Ave. Apt. 7, OaklandCalifornia 94618, US-USA SAUNDERS, Oliver, L., 8811 East Herndon Ave, Clovis, California 93619, US-USA SIEGEL, Dustin, 758 Bounty Dr. Apt. 5803, Foster CityCalifornia 94404, US-USA SPERANDIO, David, 3804 Nathan Way, Palo AltoCalifornia 94303, US-USA YANG, Hai, 32 Jody Court, San MateoCalifornia 94402, US-USA
(74)	Agent or Attorney	Tandbergs Patentkontor AS, Postboks 1570 Vika, 0118 OSLO, Norge

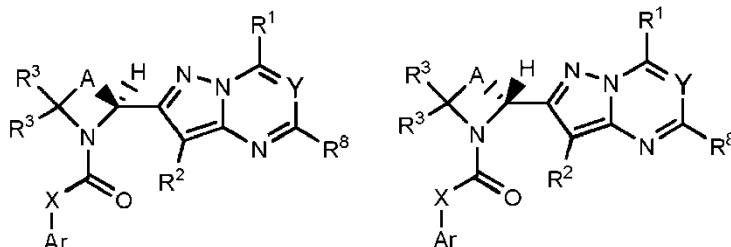
(54) Title **PYRAZOLO[1,5-A]PYRIMIDINES AND -TRIAZINES AS ANTIVIRAL AGENTS**

(56) References Cited:
WO-A1-00/42043
WO-A1-2005/061513
WO-A2-03/095455
DATABASE CHEMCATS [Online] CHEMICAL ABSTRACT SERVICE, COLUMBUS, OHIO, US;
22 April 2011 (2011-04-22), XP000002658304, Database accession no. 0056408351

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Patentkrav**1. En forbindelse med formel I eller formel II:**

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Formel I

Formel II

eller et farmasøytisk akseptabelt salt eller ester derav;

10 hvor:

A er $-(C(R^4)_2)_n-$ hvor hvilke som helst $C(R^4)_2$ av nevnte $-(C(R^4)_2)_n-$ eventuelt kan erstattes med $-O-$, $-S-$, $-S(O)_p-$, NH eller NR^a ;

n er 3, 4, 5 eller 6;

15 hver p er 1 eller 2;

Ar er en C_2 - C_{20} heterocyklylgruppe eller en C_6 - C_{20} arylgruppe, hvor C_2 - C_{20} heterocyklylgruppen eller C_6 - C_{20} arylgruppen er eventuelt substituert med 1 til 5 R^6 ,

X er $-C(R^{13})(R^{14})-$, $-N(CH_2R^{14})-$ eller X er fraværende;

Y er N eller CR^7 ;

20 hver R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^7 eller R^8 er uavhengig H, okso, OR^{11} , $NR^{11}R^{12}$, $NR^{11}C(O)R^{11}$, $NR^{11}C(O)OR^{11}$, $NR^{11}C(O)NR^{11}R^{12}$, N_3 , CN , NO_2 , SR^{11} , $S(O)_pR^a$, $NR^{11}S(O)_pR^a$, $-C(=O)R^{11}$, $-C(=O)OR^{11}$, $-C(=O)NR^{11}R^{12}$, $-C(=O)SR^{11}$, $-S(O)_p(OR^{11})$, $-SO_2NR^{11}R^{12}$, $-NR^{11}S(O)_p(OR^{11})$, $-NR^{11}SO_pNR^{11}R^{12}$, $NR^{11}C(=NR^{11})NR^{11}R^{12}$, halogen, (C_1-C_8) alkyl, (C_2-C_8) alkenyl, (C_2-C_8) alkynyl, aryl(C_1-C_8)alkyl, C_6-C_{20} aryl, C_2-C_{20} heterocyklyl, (C_3-C_7) cykloalkyl eller (C_4-C_8) karbocyklylalkyl;

25 to R^4 på tilstøtende karbonatomer, når tatt sammen, kan danne en dobbelbinding mellom de to karboner som de er bundet til eller kan danne en (C_3-C_7) cykloalkylring hvor ett karbonatom av nevnte (C_3-C_7) cykloalkylring eventuelt kan erstattes med $-O-$, $-S-$, $-S(O)_p-$, $-NH-$ eller $-NR^a$;

30 fire R^4 på tilstøtende karbonatomer, når tatt sammen, kan danne en eventuelt substituert C_6 -arylring;

to R^4 på samme karbonatom, når tatt sammen, kan danne en (C_3-C_7) cykloalkylring hvor ett karbonatom av nevnte (C_3-C_7) cykloalkylring eventuelt kan erstattes av -O-, -S-, $-S(O)_p$ -, -NH- eller $-NR^a$ -;

to R^6 på tilstøtende karbonatomer, når tatt sammen, kan danne en (C_3-C_7) cykloalkylring hvor ett karbonatom av nevnte (C_3-C_7) cykloalkylring eventuelt kan erstattes av -O-, -S-, $-S(O)_p$ -, -NH- eller $-NR^a$ -;

hvilke som helst R^6 tilstøtende til den obligate karbonylgruppe av nevnte Ar, når tatt sammen med R^3 , kan danne en binding eller en $-(C(R^S)_2)_m$ -gruppe hvor m er 1 eller 2;

hvilke som helst R^6 tilstøtende til den obligate karbonylgruppe av nevnte Ar, når tatt sammen med R^2 , kan danne en binding;

hver R^a er uavhengig (C_1-C_8) alkyl, (C_1-C_8) haloalkyl, (C_2-C_8) alkenyl, (C_2-C_8) alkynyl, aryl(C_1-C_8)alkyl, C_6-C_{20} aryl, C_2-C_{20} heterocyklyl, (C_3-C_7) cykloalkyl eller (C_4-C_8) karbocyklylalkyl hvor hvilke som helst (C_1-C_8) alkyl, (C_1-C_8) haloalkyl, (C_2-C_8) alkenyl eller (C_2-C_8) alkynyl av R^a er eventuelt substituert med en eller flere OH, NH_2 , CO_2H ,

C_2-C_{20} heterocyklyl, og hvor hvilke som helst aryl(C_1-C_8)alkyl, C_6-C_{20} aryl, C_2-C_{20} heterocyklyl, (C_3-C_7) cykloalkyl eller (C_4-C_8) karbocyklylalkyl av R^a er eventuelt substituert med en eller flere OH, NH_2 , CO_2H , C_2-C_{20} heterocyklyl eller (C_1-C_8) alkyl;

hver R^{11} eller R^{12} er uavhengig H, (C_1-C_8) alkyl, (C_2-C_8) alkenyl, (C_2-C_8) alkynyl, aryl(C_1-C_8)alkyl, C_6-C_{20} aryl, C_2-C_{20} heterocyklyl, (C_3-C_7) cykloalkyl, (C_4-C_8) karbocyklylalkyl, $-C(=O)R^a$, $-S(O)_pR^a$ eller aryl(C_1-C_8)alkyl; eller R^{11} og R^{12} tatt sammen med et nitrogen til hvilket de begge er bundet danner en 3- til 7-leddet heterocyklisk ring hvor hvilket som helst karbonatom av nevnte heterocykliske ring eventuelt kan være erstattet med -O-, -S-, $-S(O)_p$ -, -NH-, $-NR^a$ - eller $-C(O)-$;

R^{13} er H eller (C_1-C_8) alkyl;

R^{14} er H, (C_1-C_8) alkyl, $NR^{11}R^{12}$, $NR^{11}C(O)R^{11}$, $NR^{11}C(O)OR^{11}$, $NR^{11}C(O)NR^{11}R^{12}$, $NR^{11}S(O)_pR^a$, $-NR^{11}S(O)_p(OR^{11})$ eller $NR^{11}SO_pNR^{11}R^{12}$; og

hvor hver (C_1-C_8) alkyl, (C_2-C_8) alkenyl, (C_2-C_8) alkynyl, aryl(C_1-C_8)alkyl, C_6-C_{20} aryl, C_2-C_{20} heterocyklyl, (C_3-C_7) cykloalkyl eller (C_4-C_8) karbocyklylalkyl av hver R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^{11} eller R^{12} er, uavhengig, eventuelt substituert med en eller flere okso, halogen, hydroksy, NH_2 , CN, N_3 , $N(R^a)_2$, NHR^a , SH, SR^a , $S(O)_pR^a$, OR^a ,

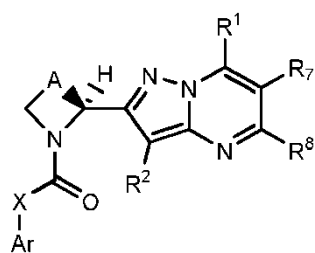
(C_1-C_8) alkyl, (C_1-C_8) haloalkyl, $-C(O)R^a$, $-C(O)H$, $-C(=O)OR^a$, $-C(=O)OH$, $-C(=O)N(R^a)_2$, $-C(=O)NHR^a$, $-C(=O)NH_2$, $NHS(O)_pR^a$, $NR^aS(O)_pR^a$, $NHC(O)R^a$, $NR^aC(O)R^a$, $NHC(O)OR^a$, $NR^aC(O)OR^a$, $NR^aC(O)NHR^a$, $NR^aC(O)N(R^a)_2$,

$NR^aC(O)NH_2$, $NHC(O)NHR^a$, $NHC(O)N(R^a)_2$, $NHC(O)NH_2$, $=NH$, $=NOH$, $=NOR^a$, $NR^aS(O)_pNHR^a$, $NR^aS(O)_pN(R^a)_2$, $NR^aS(O)_pNH_2$, $NHS(O)_pNHR^a$, $NHS(O)_pN(R^a)_2$, $NHS(O)_pNH_2$, $-OC(=O)R^a$, $-OP(O)(OH)_2$ eller R^a .

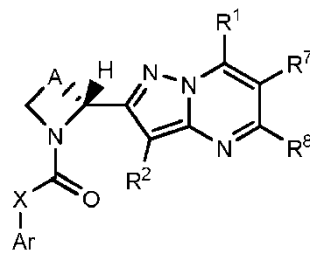
2. Forbindelse ifølge krav 1, som er en forbindelse med formel I.

3. Forbindelse ifølge krav 1 eller krav 2, hvor hver R^3 er H.

5 4. Forbindelse ifølge krav 1, som er en forbindelse med formel VII eller en forbindelse med formel VIII:



Formel VII



Formel VIII

10 eller et farmasøytisk akseptabelt salt eller ester derav.

5. Forbindelse ifølge krav 4, som er en forbindelse med formel VII.

6. Forbindelse ifølge hvilke som helst av kravene 1-5, hvor R^2 er H.

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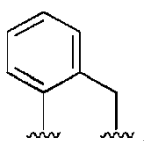
7. Forbindelse ifølge hvilke som helst av kravene 1-6, hvor R^7 er H, halogen eller (C_1-C_8) -alkyl.

8. Forbindelse ifølge hvilke som helst av kravene 1-7, hvor n er 3 eller 4.

20

9. Forbindelse ifølge hvilke som helst av kravene 1-8, hvor hver R^4 er uavhengig H eller eventuelt substituert (C_1-C_8) alkyl, eller fire R^4 på tilstøtende karbonatomer, når tatt sammen, kan danne en eventuelt substituert C_6 -arylring.

25 10. Forbindelse ifølge hvilke som helst av kravene 1-7, hvor A er $-(CH_2)_3-$, $-(CH_2)_4-$, $-CH_2-O-CH_2-$, $-CH_2-CH(CH_3)-CH_2-$, $-CH_2-CH(CF_3)-CH_2-$, $-CH_2-CH_2-CH(CH_3)-$ eller strukturen:



11. Forbindelse ifølge hvilke som helst av kravene 1-7, hvor A er $-(CH_2)_3-$.

12. Forbindelse ifølge hvilke som helst av kravene 1-11 hvor X er $-CR^{13}(NR^{11}C(O)OR^{11})-$, $-CR^{13}(NR^{11}R^{12})-$, $-CR^{13}(NR^{11}S(O)_pR^a)-$ eller X er fraværende.

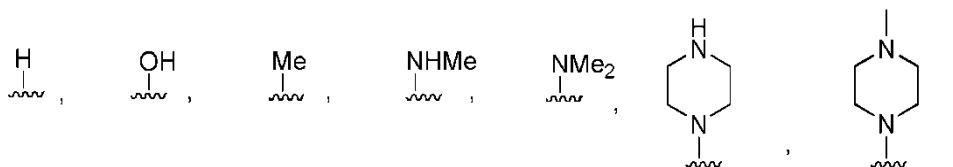
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13. Forbindelse ifølge hvilke som helst av kravene 1-11, hvor X er fraværende.

14. Forbindelse ifølge hvilke som helst av kravene 1-13, hvor R^1 er H, OR^{11} , $NR^{11}R^{12}$, CN, (C_1-C_8) alkyl, C_6-C_{20} aryl, C_2-C_{20} heterocyklyl eller (C_3-C_7) cykloalkyl, hvor hvilke som helst (C_1-C_8) alkyl, C_6-C_{20} aryl, C_2-C_{20} heterocyklyl eller (C_3-C_7) cykloalkyl av R^8 er eventuelt substituert med en eller flere okso, halogen, hydroksy, NH_2 , CN, N_3 , $N(R^a)_2$, NHR^a , SH, SR^a , $S(O)_pR^a$, OR^a , (C_1-C_8) alkyl, (C_1-C_8) haloalkyl, $-C(O)R^a$, $-C(O)H$, $-C(=O)OR^a$, $-C(=O)OH$, $-C(=O)N(R^a)_2$, $-C(=O)NHR^a$, $-C(=O)NH_2$, $NHS(O)_pR^a$, $NR^aS(O)_pR^a$, $NHC(O)R^a$, $NR^aC(O)R^a$, $NHC(O)OR^a$, $NR^aC(O)OR^a$, $NR^aC(O)NHR^a$, $NR^aC(O)N(R^a)_2$, $NR^aC(O)NH_2$, $NHC(O)NHR^a$, $NHC(O)N(R^a)_2$, $NHC(O)NH_2$, $=NH$, $=NOH$, $=NOR^a$, $NR^aS(O)_pNHR^a$, $NR^aS(O)_pN(R^a)_2$, $NR^aS(O)_pNH_2$, $NHS(O)_pNHR^a$, $NHS(O)_pN(R^a)_2$, $NHS(O)_pNH_2$, $-OC(=O)R^a$, $-OP(O)(OH)_2$ eller R^a .

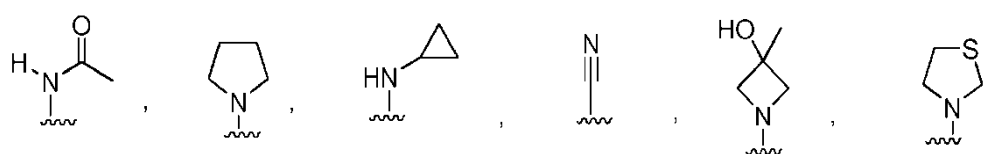
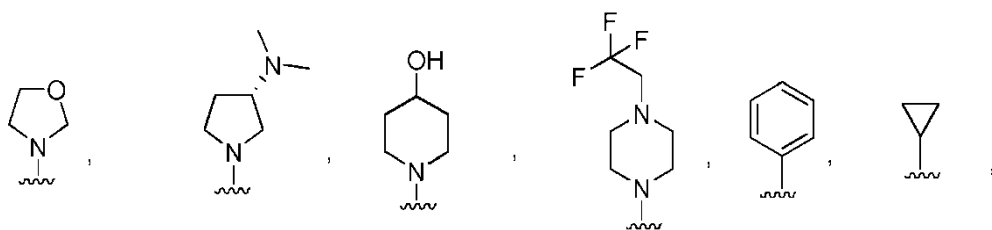
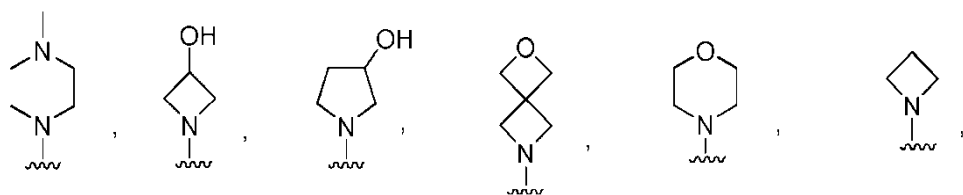
15. Forbindelse ifølge hvilke som helst av kravene 1-13, hvor R^1 er H eller C_2-C_{20} heterocyklyl, hvor hvilke som helst C_2-C_{20} heterocyklyl av R^1 er eventuelt substituert med en eller flere okso, halogen, hydroksy, NH_2 , CN, N_3 , $N(R^a)_2$, NHR^a , SH, SR^a , $S(O)_pR^a$, OR^a , (C_1-C_8) alkyl, (C_1-C_8) haloalkyl, $-C(O)R^a$, $-C(O)H$, $-C(=O)OR^a$, $-C(=O)OH$, $-C(=O)N(R^a)_2$, $-C(=O)NHR^a$, $-C(=O)NH_2$, $NHS(O)_pR^a$, $NR^aS(O)_pR^a$, $NHC(O)R^a$, $NR^aC(O)R^a$, $NHC(O)OR^a$, $NR^aC(O)OR^a$, $NR^aC(O)NHR^a$, $NR^aC(O)N(R^a)_2$, $NR^aC(O)NH_2$, $NHC(O)NHR^a$, $NHC(O)N(R^a)_2$, $NHC(O)NH_2$, $=NH$, $=NOH$, $=NOR^a$, $NR^aS(O)_pNHR^a$, $NR^aS(O)_pN(R^a)_2$, $NR^aS(O)_pNH_2$, $NHS(O)_pNHR^a$, $NHS(O)_pN(R^a)_2$, $NHS(O)_pNH_2$, $-OC(=O)R^a$, $-OP(O)(OH)_2$ eller R^a .

16. Forbindelse ifølge hvilke som helst av kravene 1-13, hvor R^1 er valgt fra:

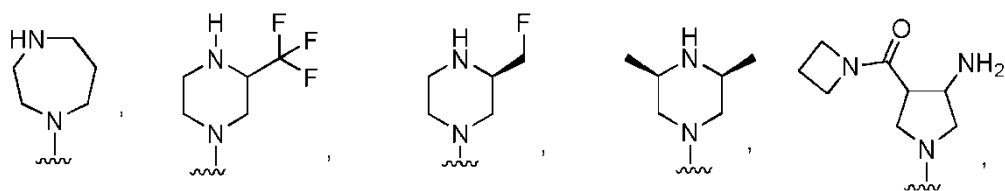
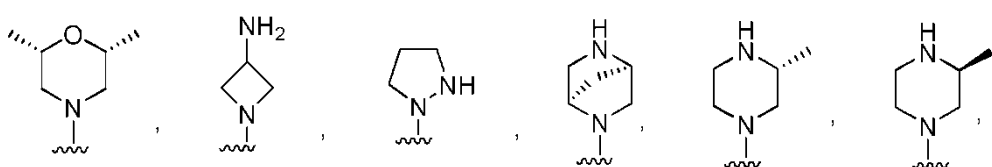


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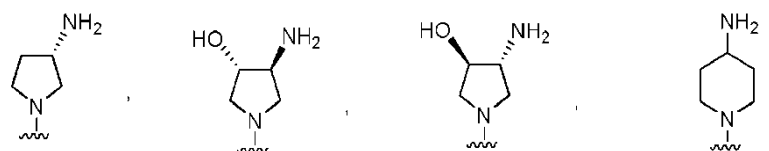
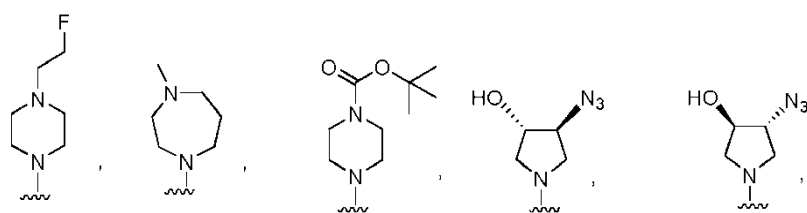
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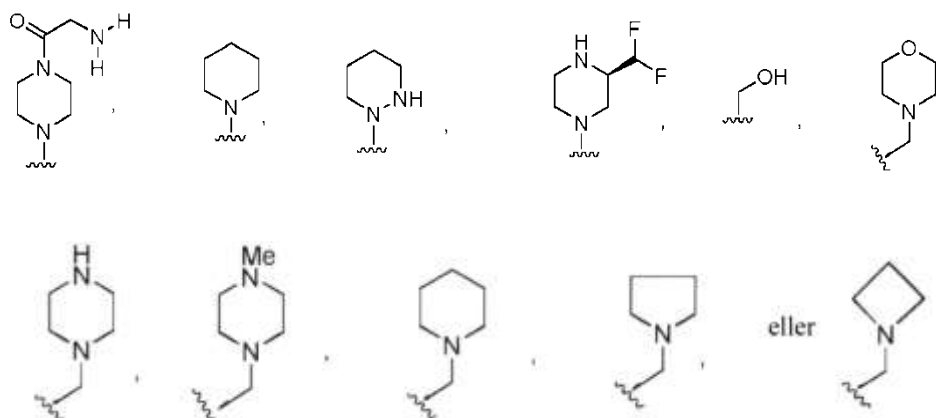


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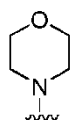
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17. Forbindelse ifølge hvilke som helst af kravene 1-13, hvor R^1 er H eller:



18. Forbindelse ifølge hvilke som helst af kravene 1-17, hvor Ar er en C_6 - C_{20} arylgruppe, hvor C_6 - C_{20} arylgruppen er eventuelt substitueret med 1 til 5 R^6 .

19. Forbindelse ifølge hvilke som helst af kravene 1-17, hvor Ar er fenyl eventuelt substitueret med 1 til 5 R^6 .

15

20. Forbindelse ifølge hvilke som helst af kravene 1-19, hvor hver R^6 er uafhængig valgt fra OR^{11} , $NR^{11}R^{12}$, $NR^{11}C(O)R^{11}$, $NR^{11}C(O)OR^{11}$, CN, $NR^{11}S(O)_pR^a$, $-C(=O)NR^{11}R^{12}$,

$-NR^{11}SO_pNR^{11}R^{12}$, halogen, (C_1-C_8) alkyl, (C_2-C_8) alkynyl, C_6-C_{20} aryl, C_2-C_{20} heterocyklyl og (C_3-C_7) cykloalkyl, hvor hvilke som helst C_1-C_8 alkyl, (C_2-C_8) alkynyl, C_6-C_{20} aryl, C_2-C_{20} hetero-

cyklyl og (C_3-C_7) cykloalkyl af R^6 er eventuelt substitueret med en eller flere okso, halogen, hydroksy, NH_2 , CN, N_3 , $N(R^a)_2$, NHR^a , SH, SR^a , $S(O)_pR^a$, OR^a , (C_1-C_8) alkyl, (C_1-C_8) haloalkyl, $-C(O)R^a$, $-C(O)H$, $-C(=O)OR^a$, $-C(=O)OH$, $-C(=O)N(R^a)_2$, $-C(=O)NHR^a$, $-C(=O)NH_2$,

$NHS(O)_pR^a$, $NR^aS(O)_pR^a$, $NHC(O)R^a$, $NR^aC(O)R^a$, $NHC(O)OR^a$, $NR^aC(O)OR^a$, $NR^aC(O)NHR^a$, $NR^aC(O)N(R^a)_2$, $NR^aC(O)NH_2$, $NHC(O)NHR^a$, $NHC(O)N(R^a)_2$, $NHC(O)NH_2$,

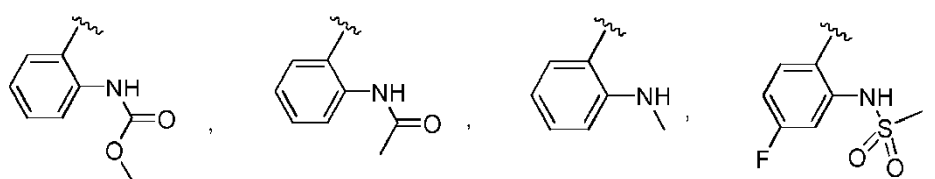
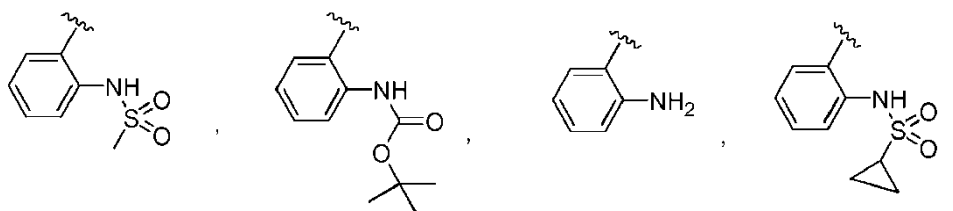
$=NH$, $=NOH$, $=NOR^a$, $NR^aS(O)_pNHR^a$, $NR^aS(O)_pN(R^a)_2$, $NR^aS(O)_pNH_2$, $NHS(O)_pNHR^a$, $NHS(O)_pN(R^a)_2$, $NHS(O)_pNH_2$, $-OC(=O)R^a$, $-OP(O)(OH)_2$ eller R^a .

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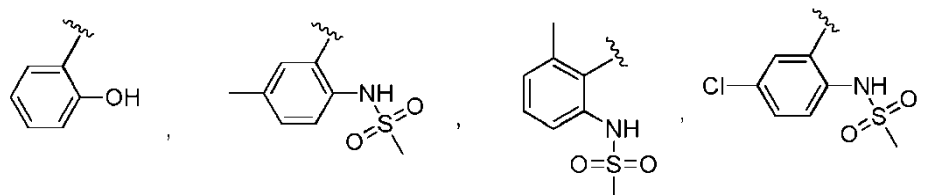
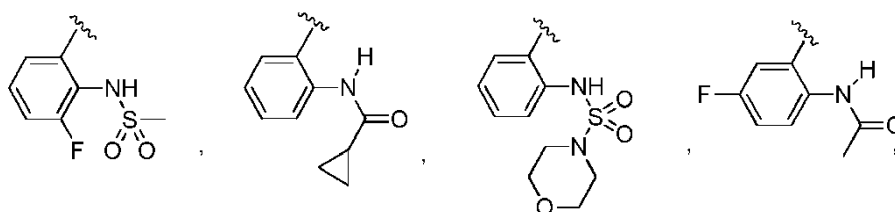
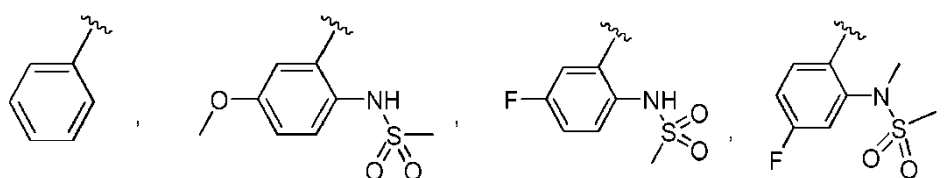
21. Forbindelse ifølge hvilke som helst af kravene 1-19, hvor hver R^6 er uafhængig valgt fra $NR^{11}S(O)_pR^a$, $NR^{11}C(O)OR^{11}$, $NR^{11}C(O)R^{11}$, (C_1-C_8) alkyl og halogen.

22. Forbindelse ifølge hvilke som helst af kravene 1-17, hvor Ar er:

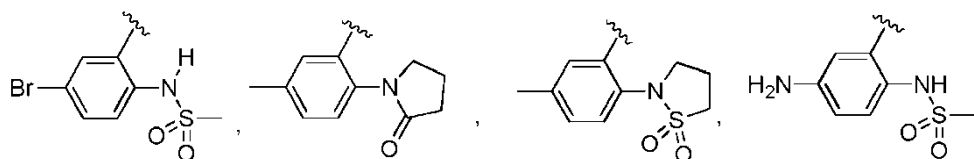
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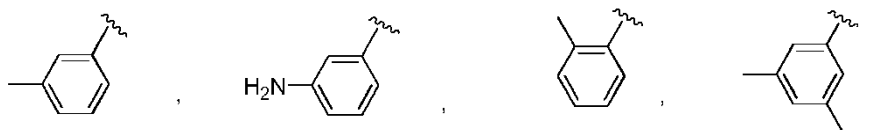
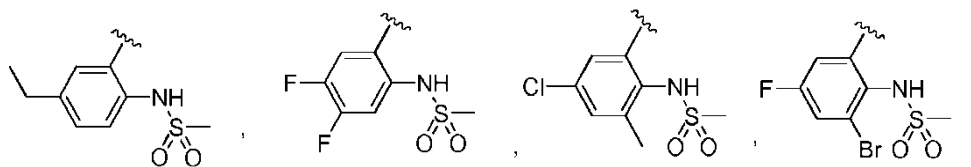
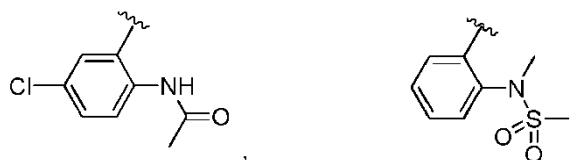
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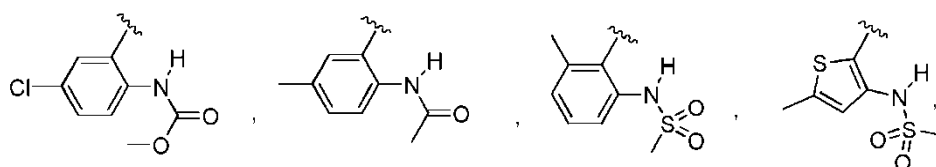
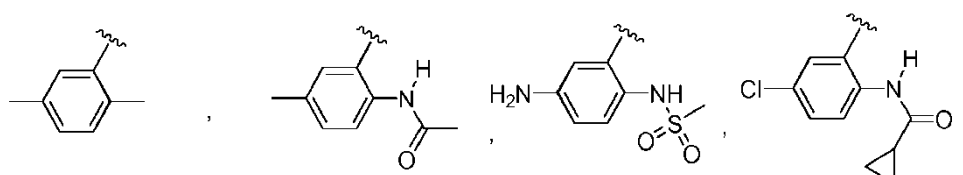
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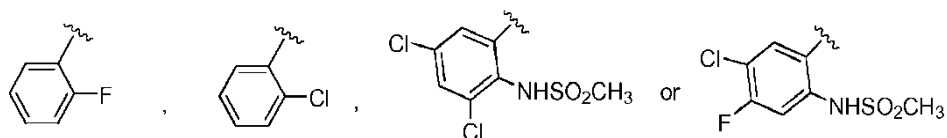
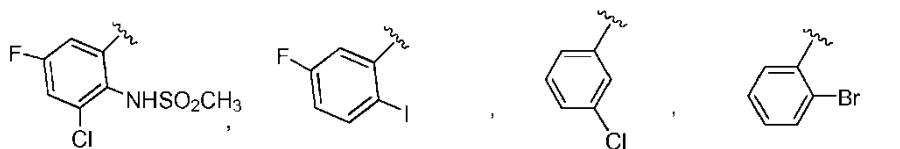
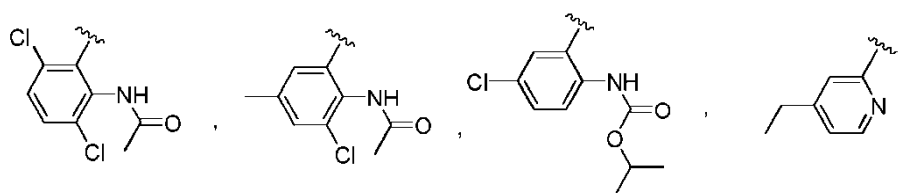
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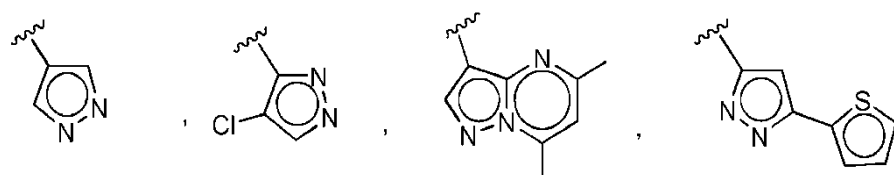
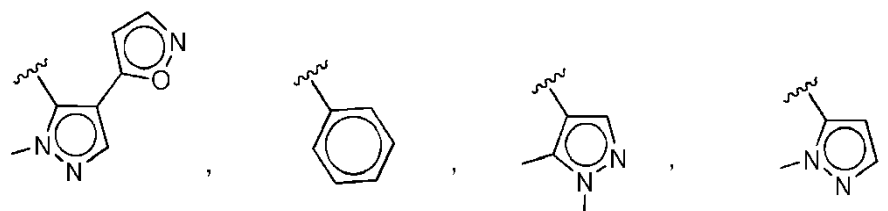
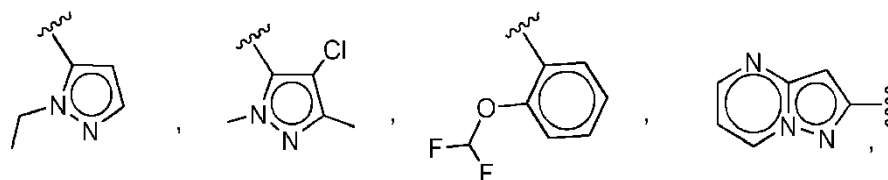
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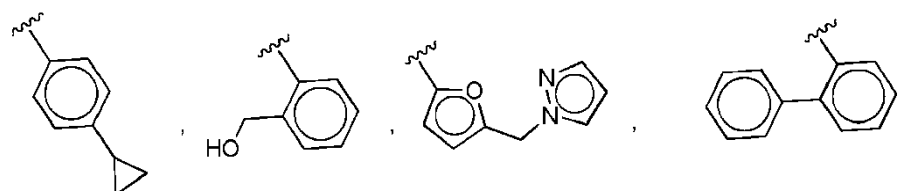
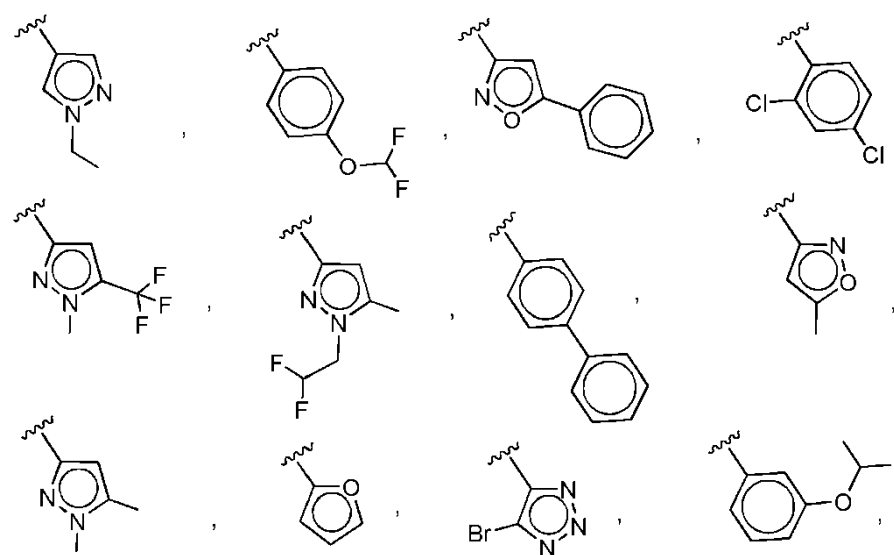
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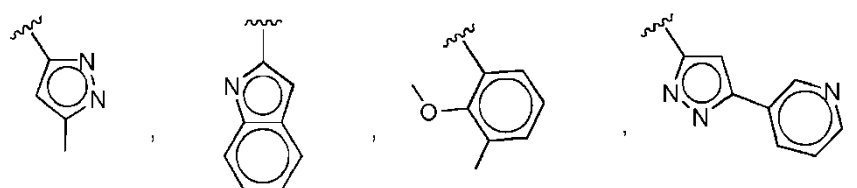
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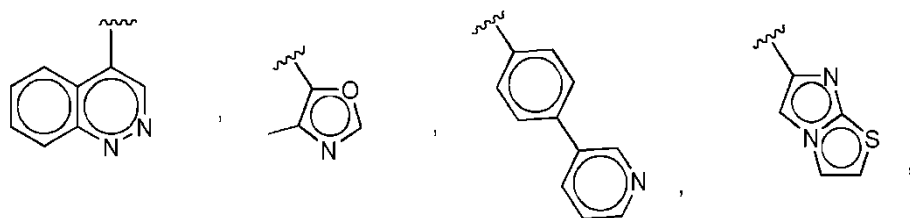
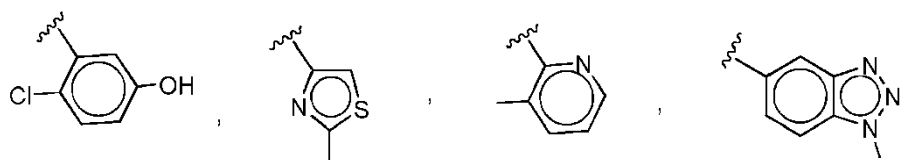
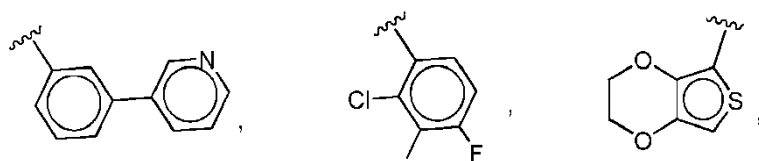
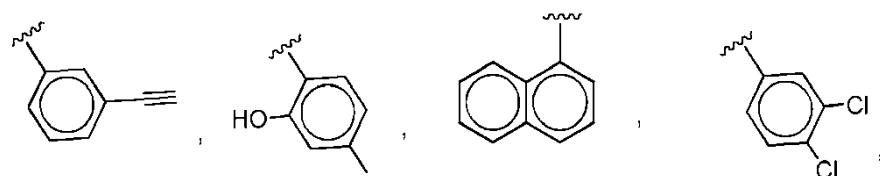
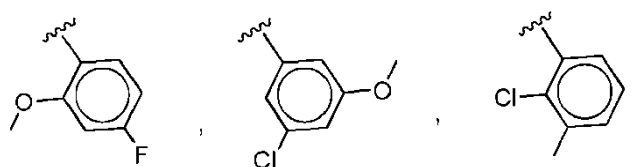
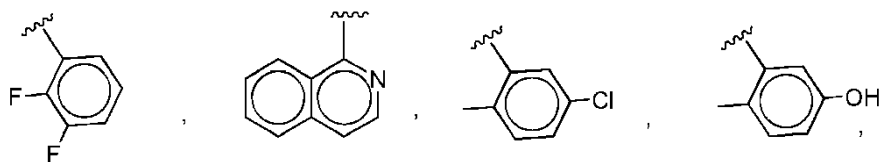
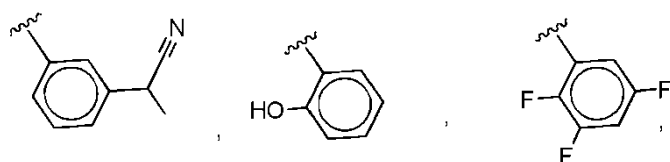
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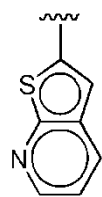
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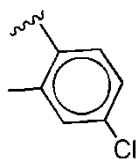
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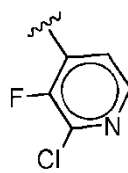
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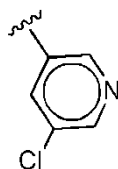
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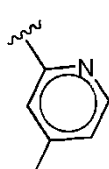
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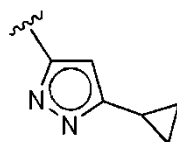
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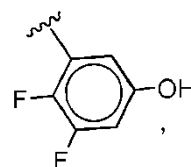
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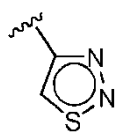
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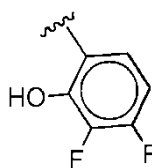
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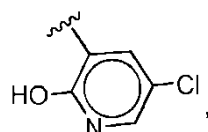
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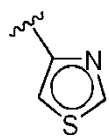


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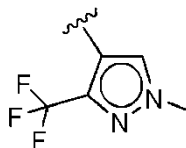


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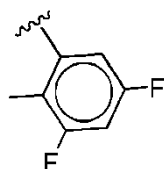
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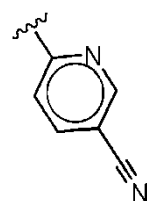
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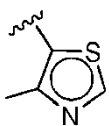
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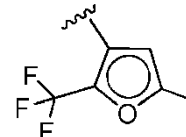
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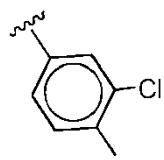
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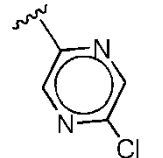
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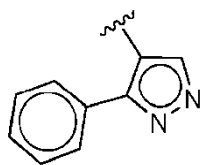


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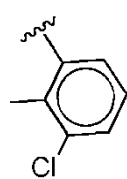


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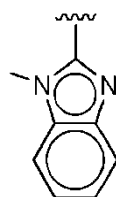
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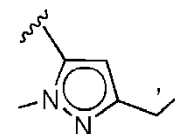
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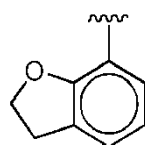
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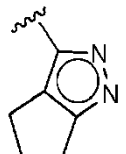
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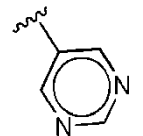
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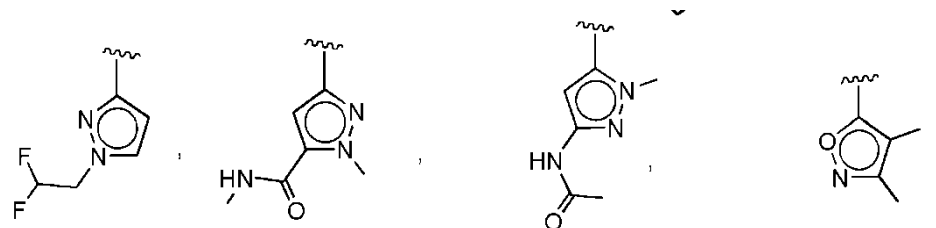
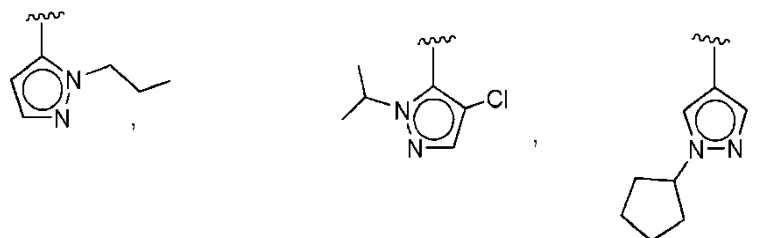
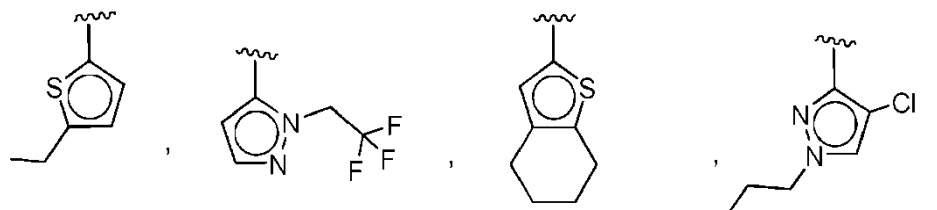
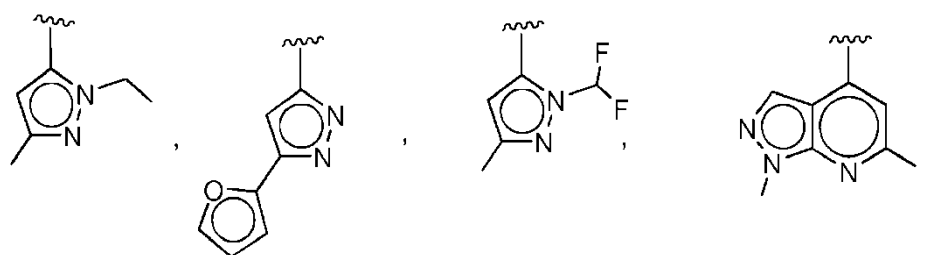
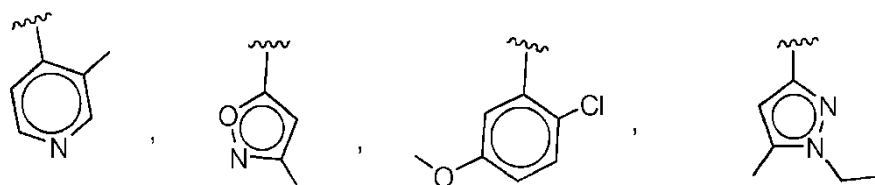
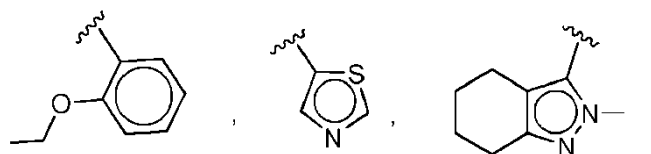
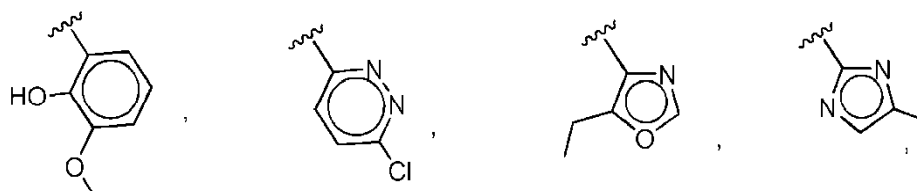
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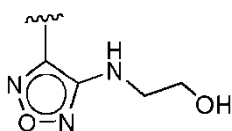


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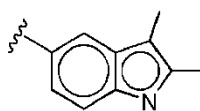
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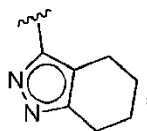
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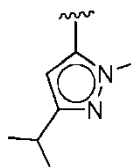
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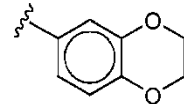
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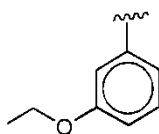


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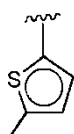


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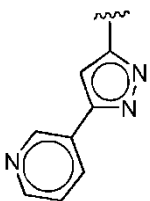
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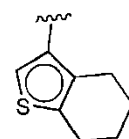
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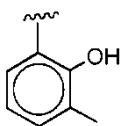
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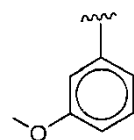
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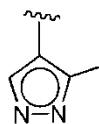
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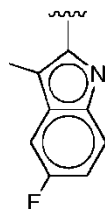
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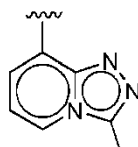
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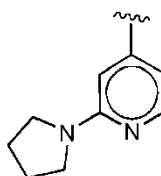
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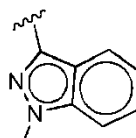
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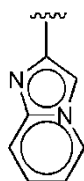


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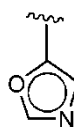


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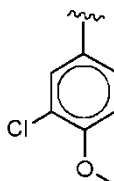
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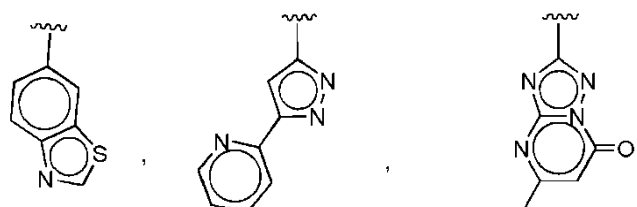
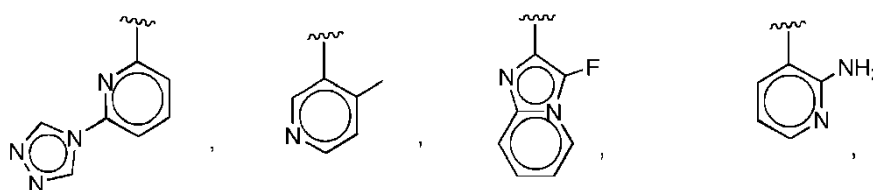
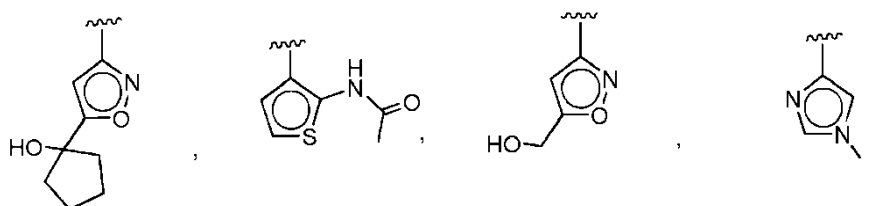
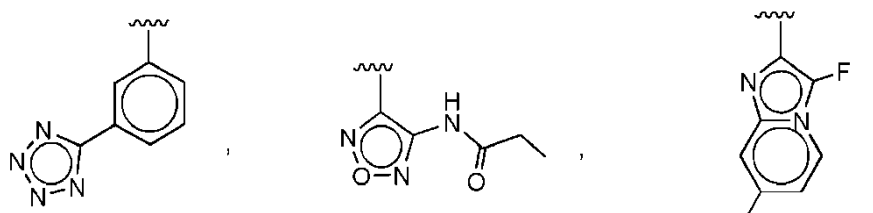
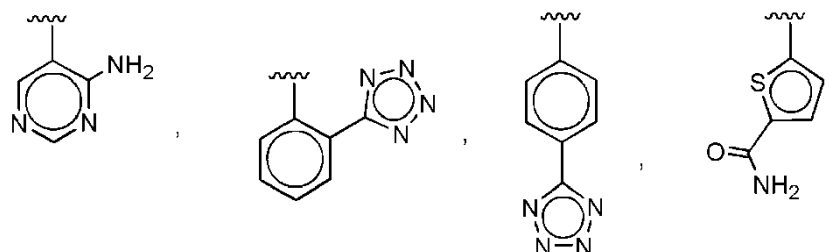
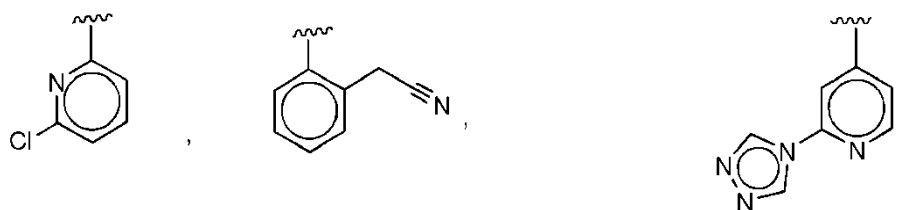
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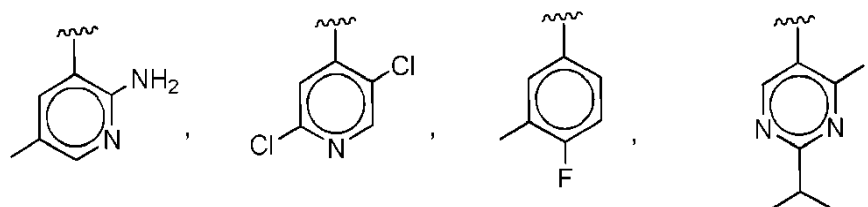
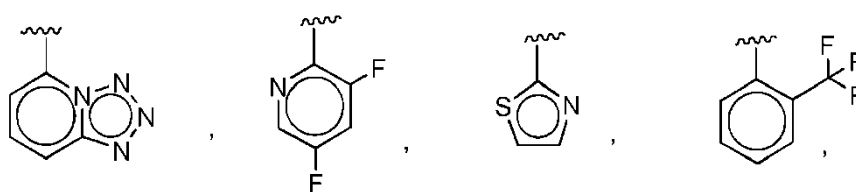
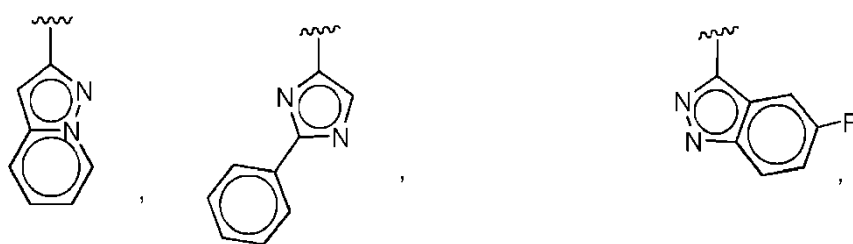
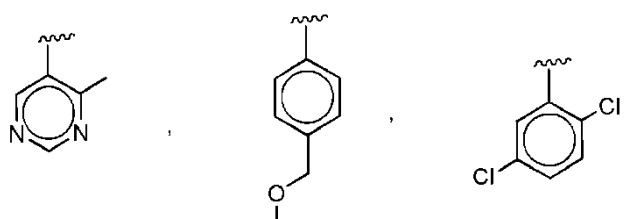
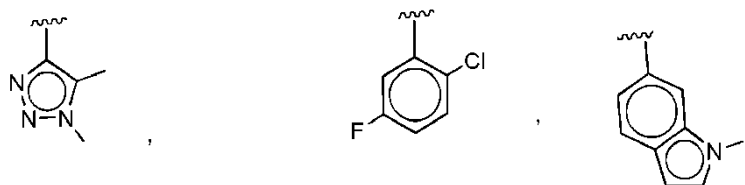


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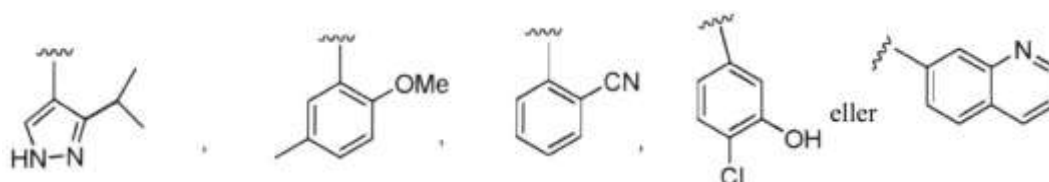
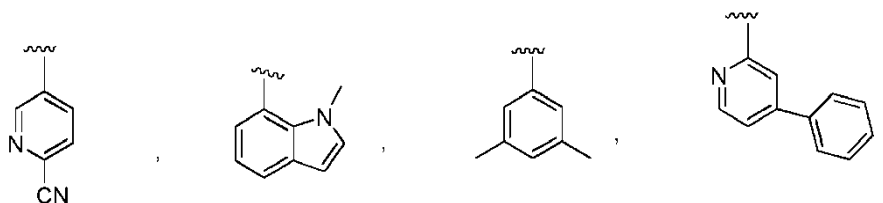
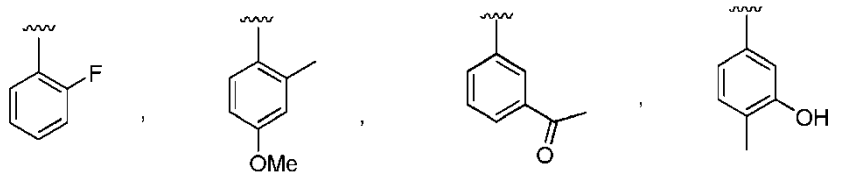
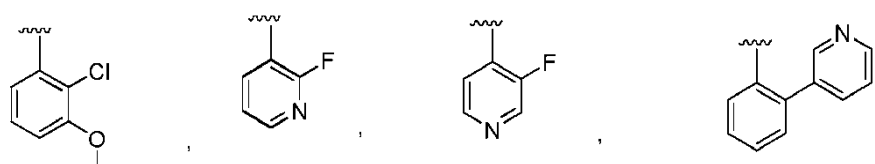
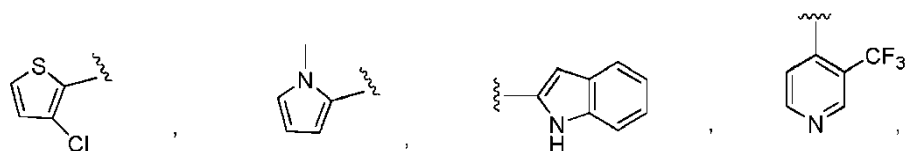
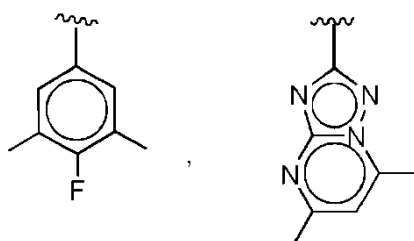


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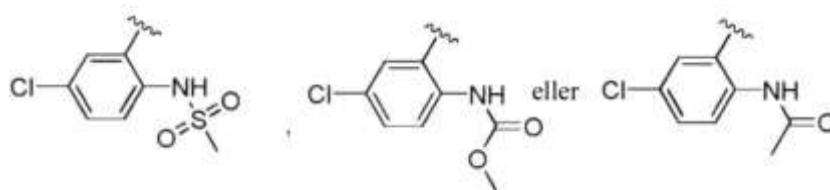
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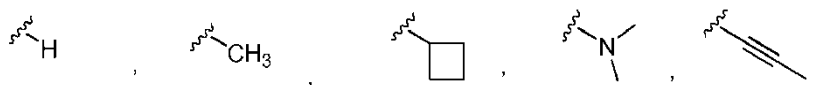
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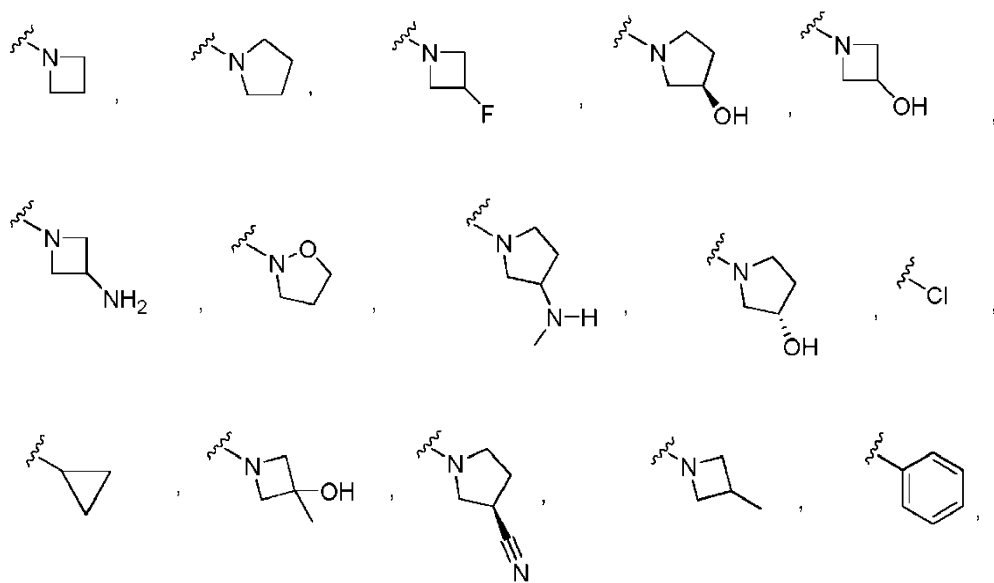
15 **23.** Forbindelse ifølge hvilke som helst af kravene 1-17, hvor Ar er:



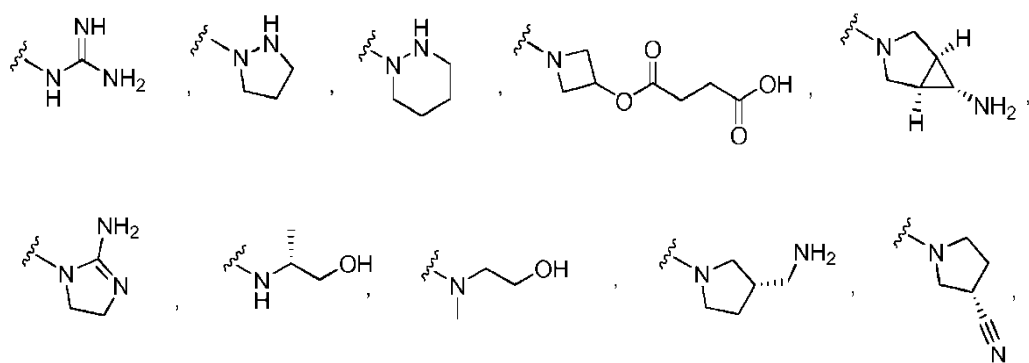
- 24.** Forbindelse ifølge hvilke som helst av kravene 1-23, hvor R^8 er H, $NR^{11}R^{12}$,
 5 $NR^{11}C(=NR^{11})NR^{11}R^{12}$, halogen, (C_1-C_8) alkyl, (C_2-C_8) alkynyl, C_6-C_{20} aryl, C_2-C_{20} heterocyklyl eller (C_3-C_7) cykloalkyl, hvor hvilke som helst (C_1-C_8) alkyl, (C_2-C_8) alkynyl, C_6-C_{20} aryl, C_2-C_{20} heterocyklyl, eller (C_3-C_7) cykloalkyl av R^8 er eventuelt substituert med en eller flere okso, halogen, hydroksy, NH_2 , CN, N_3 , $N(R^a)_2$, NHR^a , SH, SR^a , $S(O)_pR^a$, OR^a , (C_1-C_8) alkyl, (C_1-C_8) haloalkyl, $-C(O)R^a$, $-C(O)H$, $-C(=O)OR^a$, $-C(=O)OH$, $-C(=O)N(R^a)_2$, $-C(=O)NHR^a$,
 10 $-C(=O)NH_2$, $NHS(O)_pR^a$, $NR^aS(O)_pR^a$, $NHC(O)R^a$, $NR^aC(O)R^a$, $NHC(O)OR^a$, $NR^aC(O)OR^a$, $NR^aC(O)NHR^a$, $NR^aC(O)N(R^a)_2$, $NR^aC(O)NH_2$, $NHC(O)NHR^a$, $NHC(O)N(R^a)_2$, $NHC(O)NH_2$, $=NH$, $=NOH$, $=NOR^a$, $NR^aS(O)_pNHR^a$, $NR^aS(O)_pN(R^a)_2$, $NR^aS(O)_pNH_2$, $NHS(O)_pNHR^a$, $NHS(O)_pN(R^a)_2$, $NHS(O)_pNH_2$, $-OC(=O)R^a$, $-OP(O)(OH)_2$ eller R^a .
- 25.** Forbindelse ifølge hvilke som helst av kravene 1-23, hvor R^8 er C_2-C_{20} heterocyklyl, hvor C_2-C_{20} heterocyklyl er eventuelt substituert med en eller flere okso, halogen, hydroksy, NH_2 , CN, N_3 , $N(R^a)_2$, NHR^a , SH, SR^a , $S(O)_pR^a$, OR^a , (C_1-C_8) alkyl, (C_1-C_8) haloalkyl, $-C(O)R^a$, $-C(O)H$, $-C(=O)OR^a$, $-C(=O)OH$, $-C(=O)N(R^a)_2$, $-C(=O)NHR^a$, $-C(=O)NH_2$, $NHS(O)_pR^a$, $NR^aS(O)_pR^a$, $NHC(O)R^a$, $NR^aC(O)R^a$, $NHC(O)OR^a$, $NR^aC(O)OR^a$, $NR^aC(O)NHR^a$,
 20 $NR^aC(O)N(R^a)_2$, $NR^aC(O)NH_2$, $NHC(O)NHR^a$, $NHC(O)N(R^a)_2$, $NHC(O)NH_2$, $=NH$, $=NOH$, $=NOR^a$, $NR^aS(O)_pNHR^a$, $NR^aS(O)_pN(R^a)_2$, $NR^aS(O)_pNH_2$, $NHS(O)_pNHR^a$, $NHS(O)_pN(R^a)_2$, $NHS(O)_pNH_2$, $-OC(=O)R^a$, $-OP(O)(OH)_2$ eller R^a .
- 26.** Forbindelse ifølge hvilke som helst av kravene 1-23, hvor R^8 er pyrrolidinyll eller
 25 azetidinyll, hvor pyrrolidinyll eller azetidinyll er eventuelt substituert med en eller flere hydroksy, NH_2 , CN eller $-OP(O)(OH)_2$.
- 27.** Forbindelse ifølge hvilke som helst av kravene 1-23, hvor R^8 er:



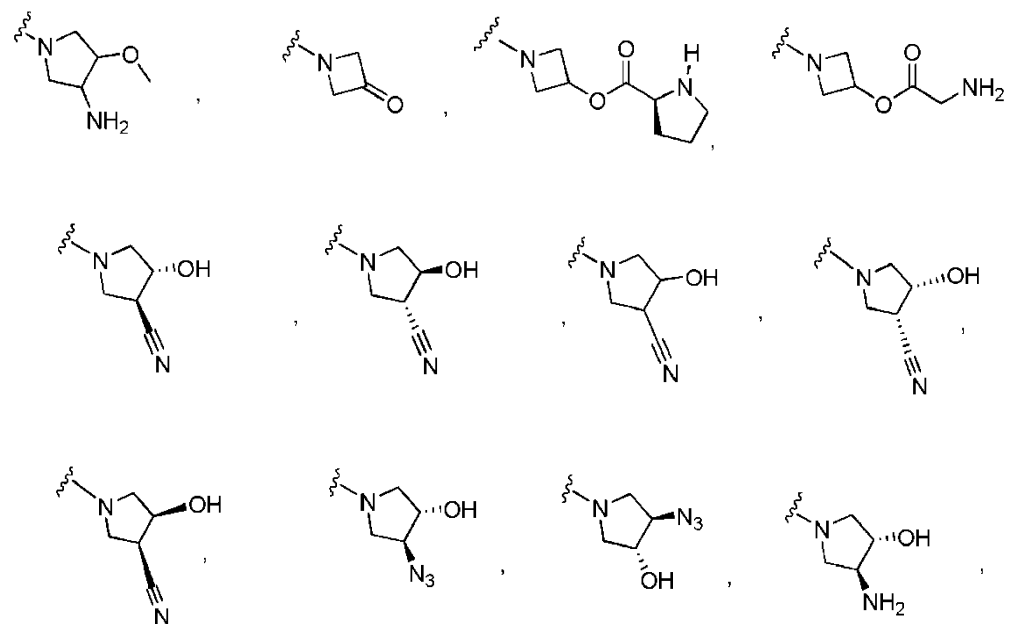
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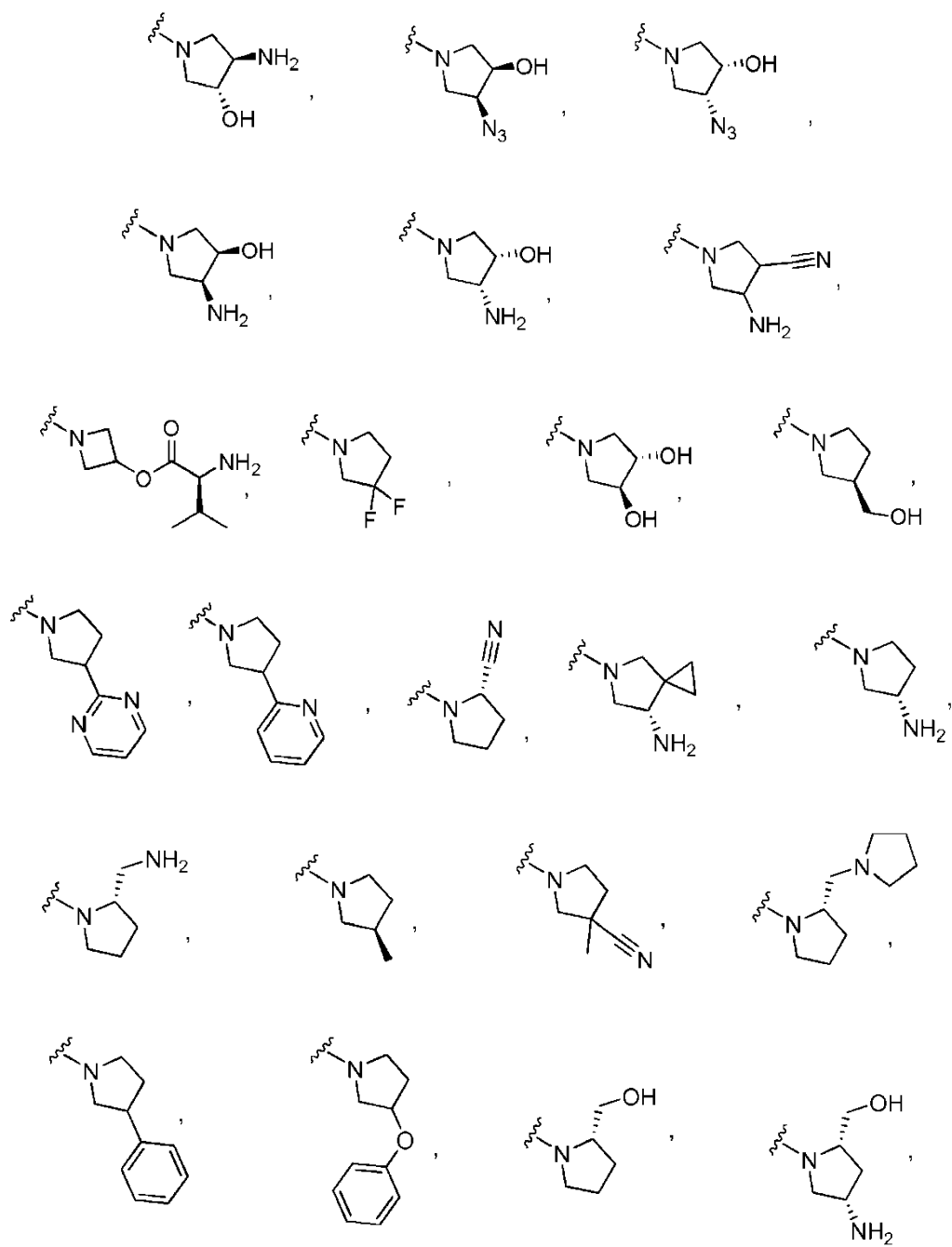


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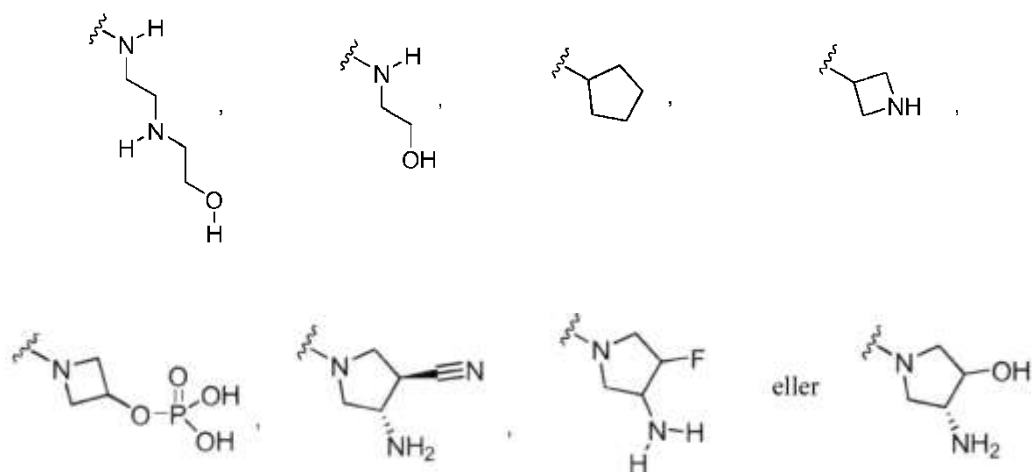
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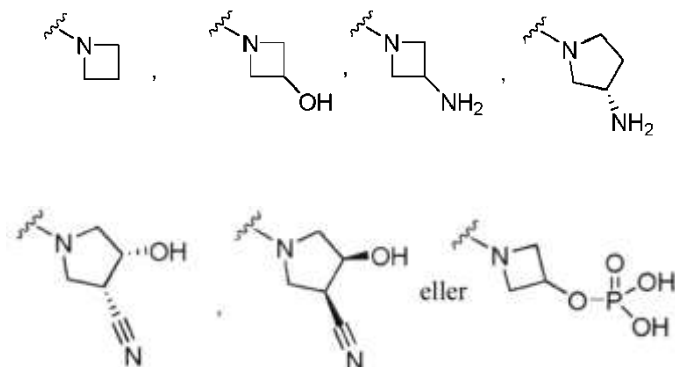
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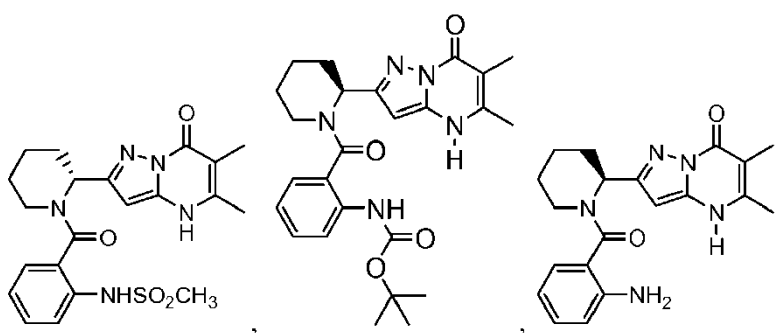
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28. Forbindelse ifølge hvilke som helst af kravene 1-23, hvor R^8 er:

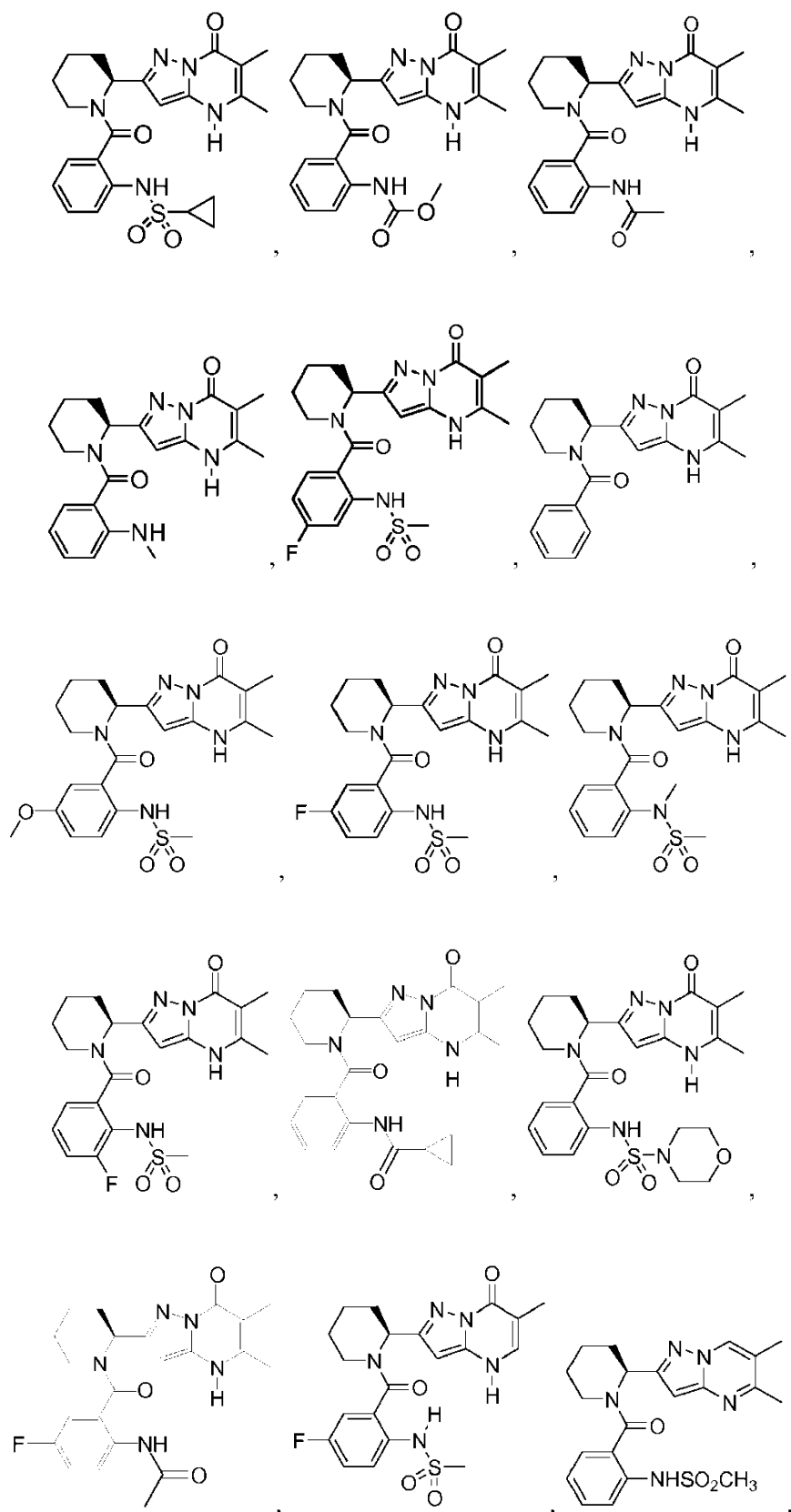


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29. Forbindelse ifølge krav 1, valgt fra gruppen bestående af:

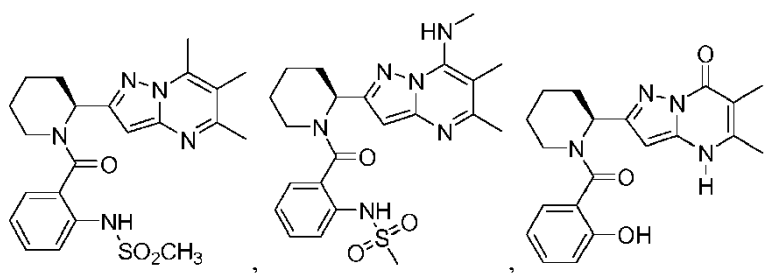
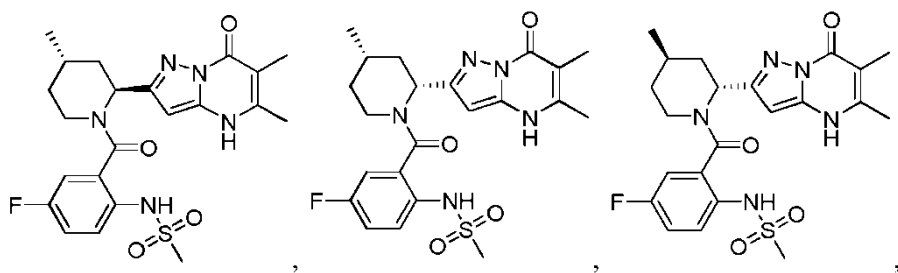
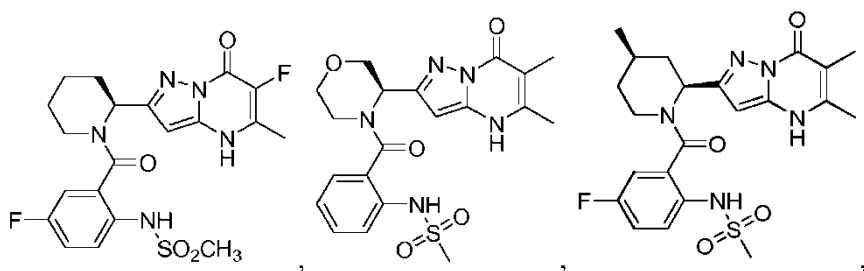


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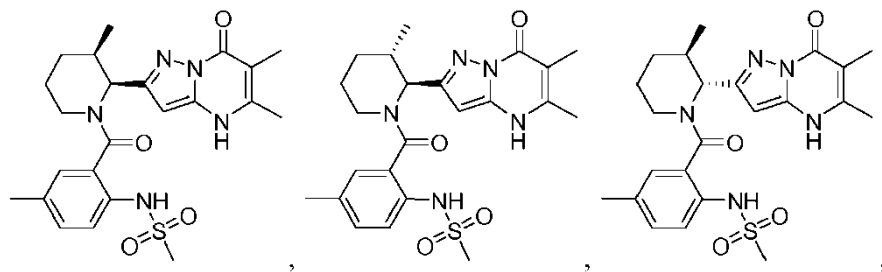
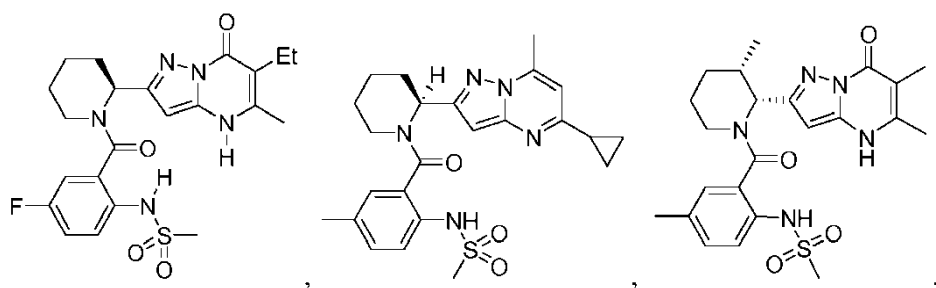


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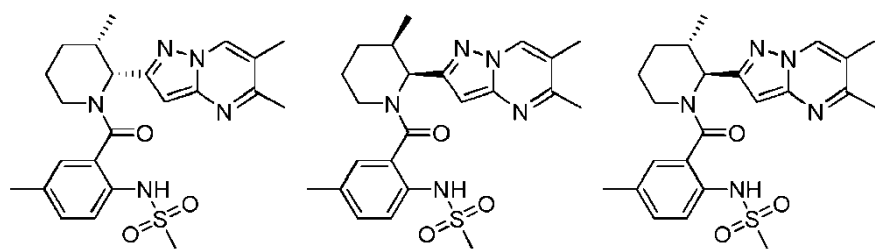
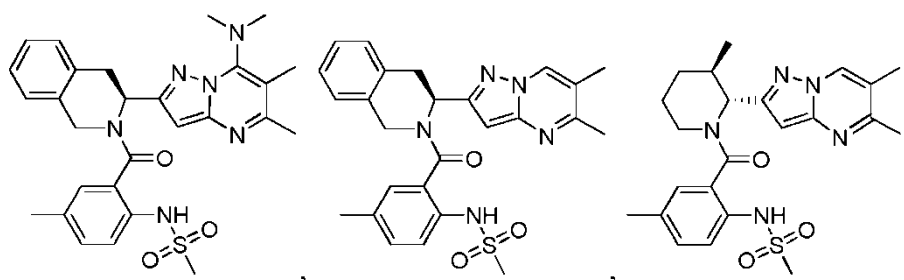
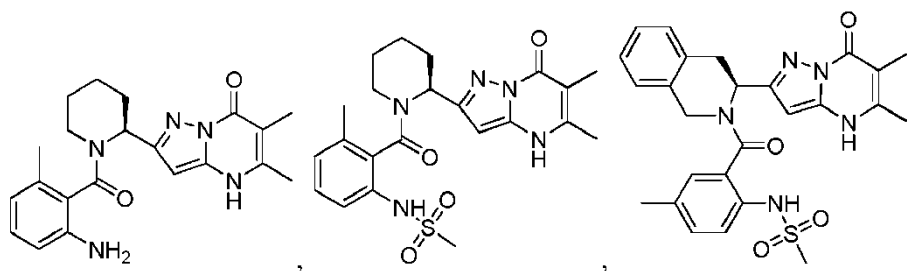
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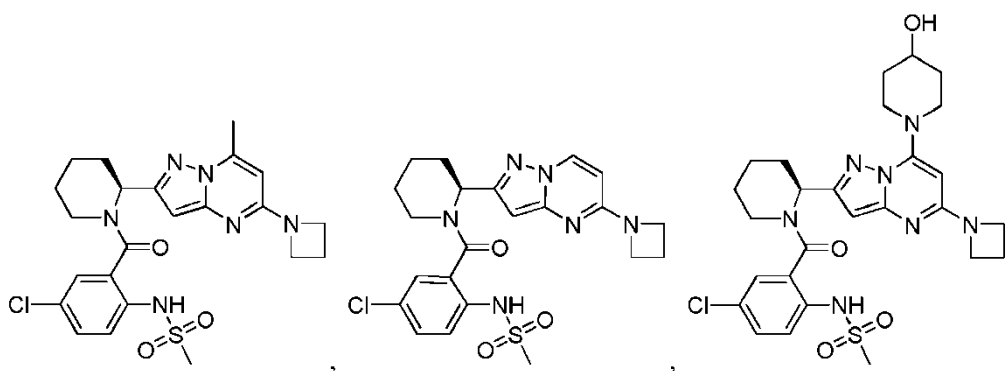
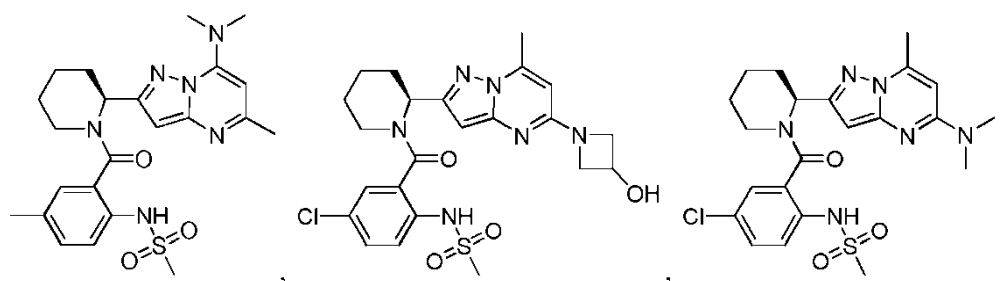
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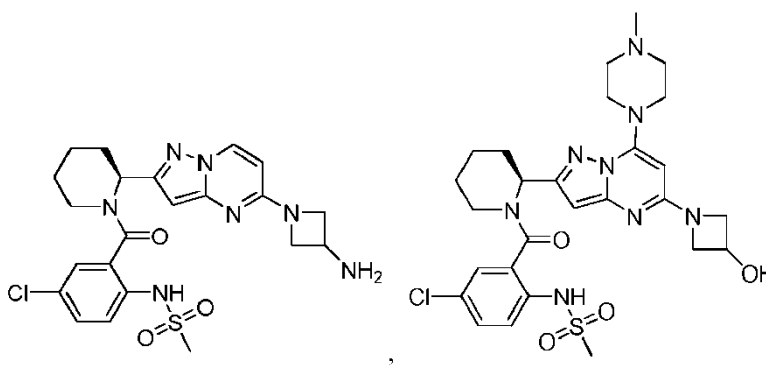
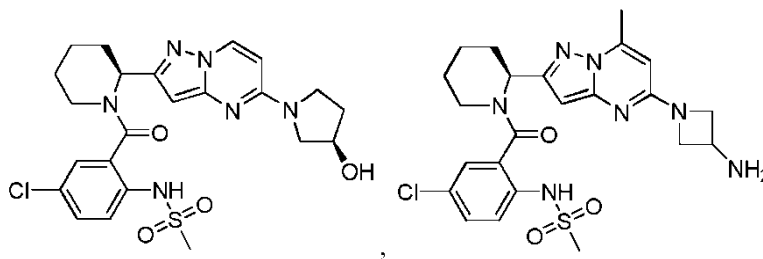
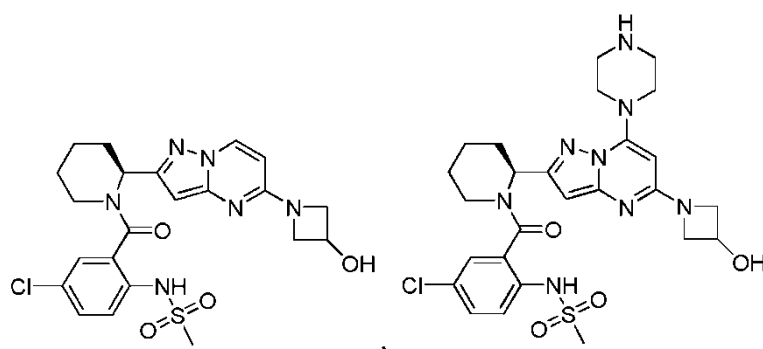
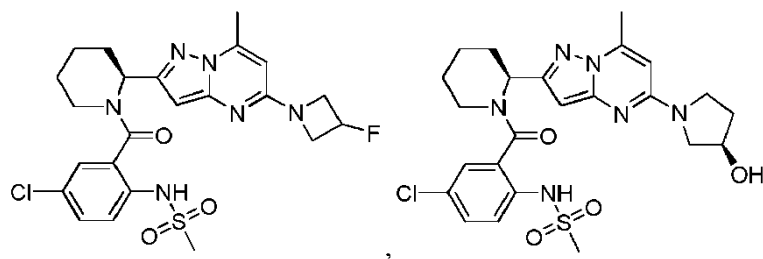
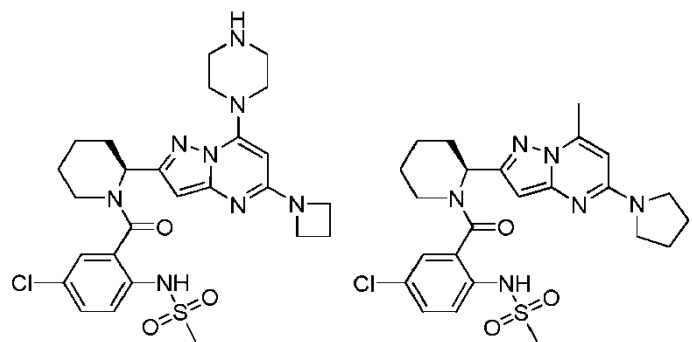
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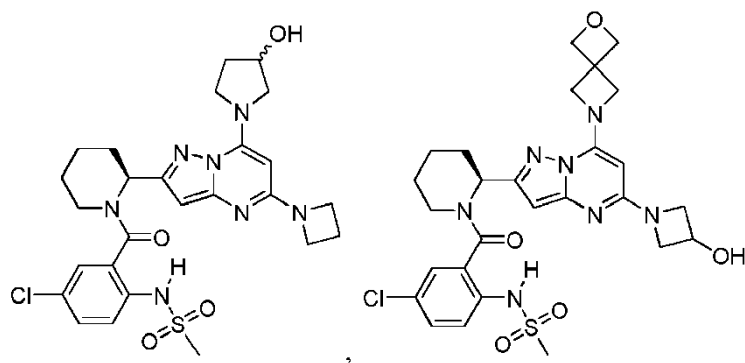
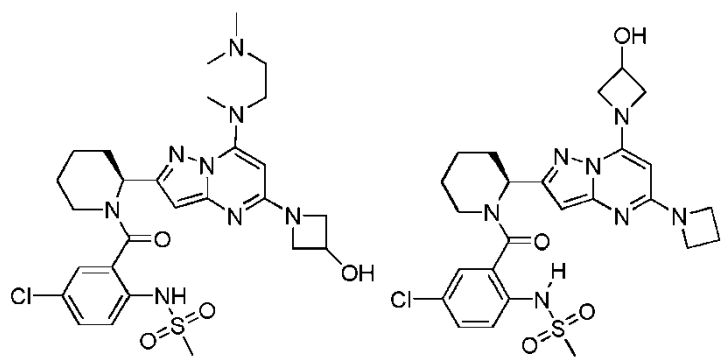


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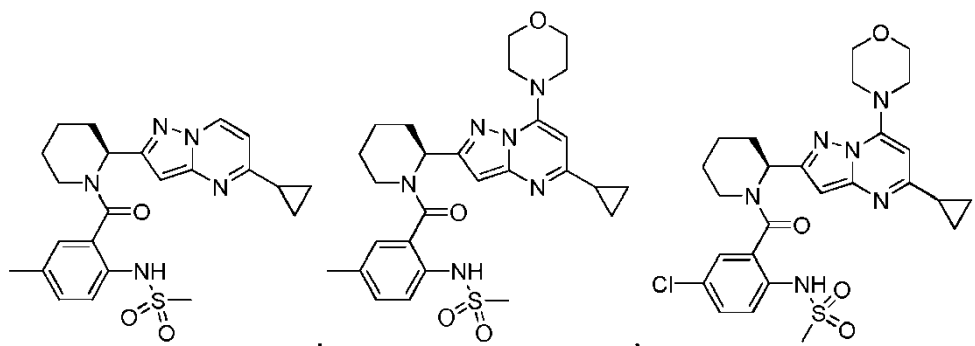
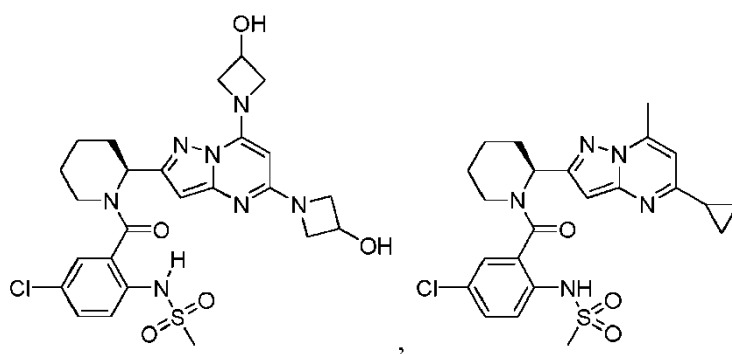


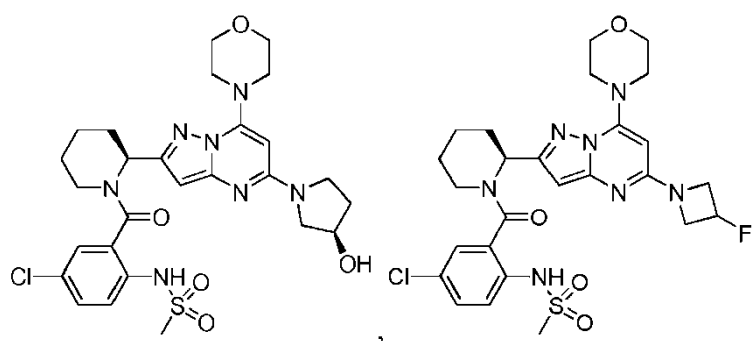
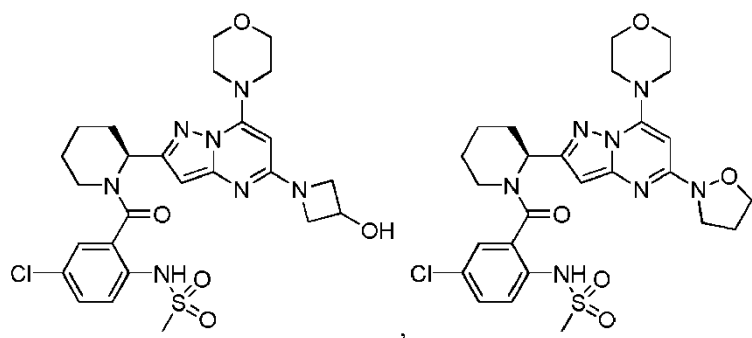
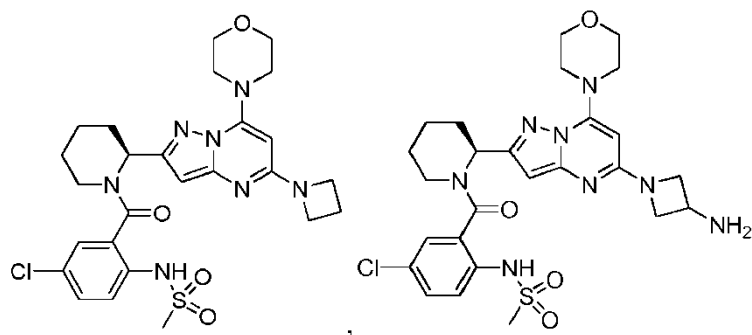
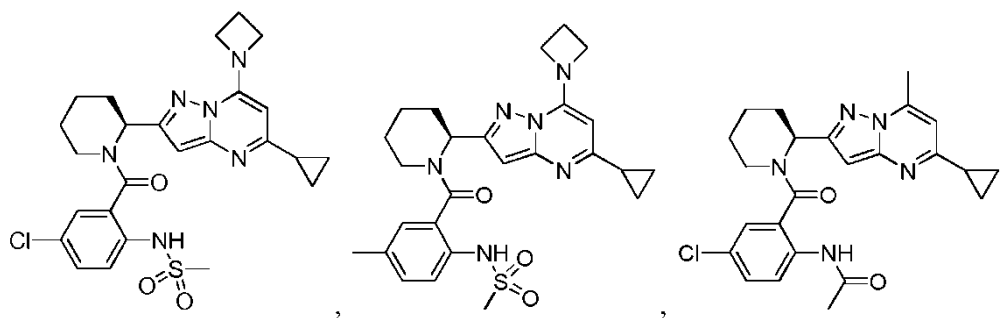
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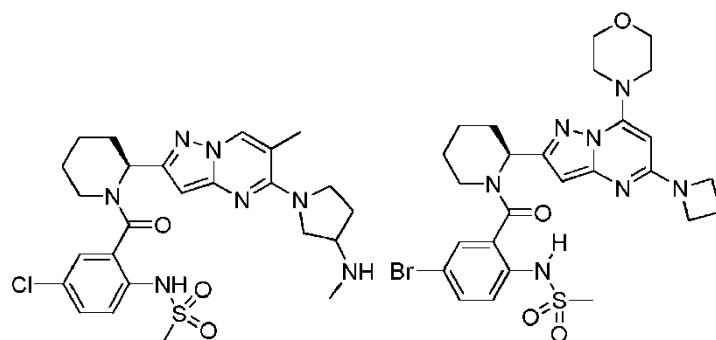
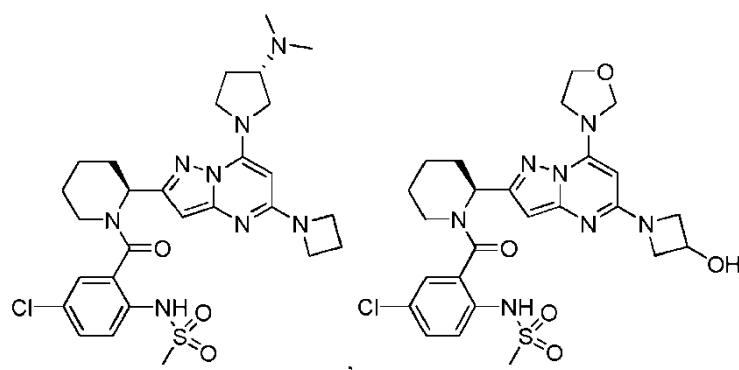
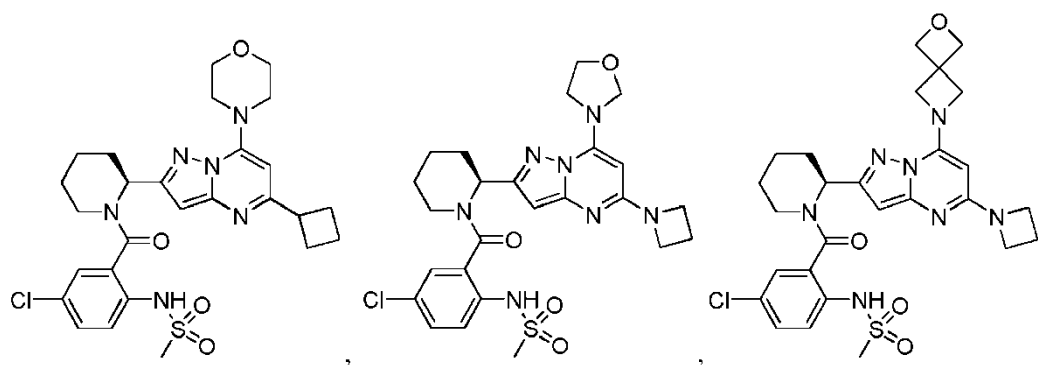




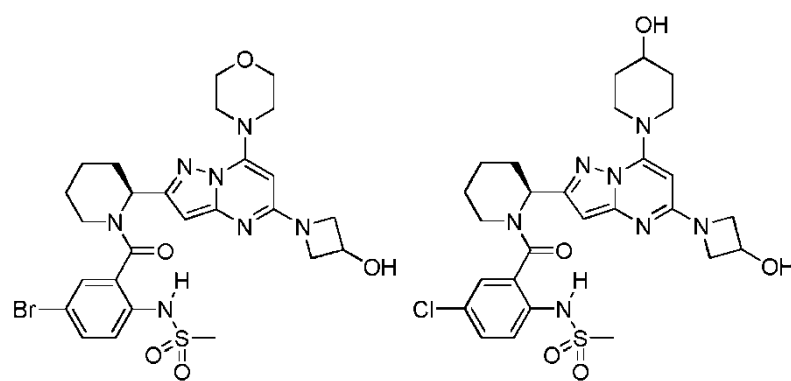
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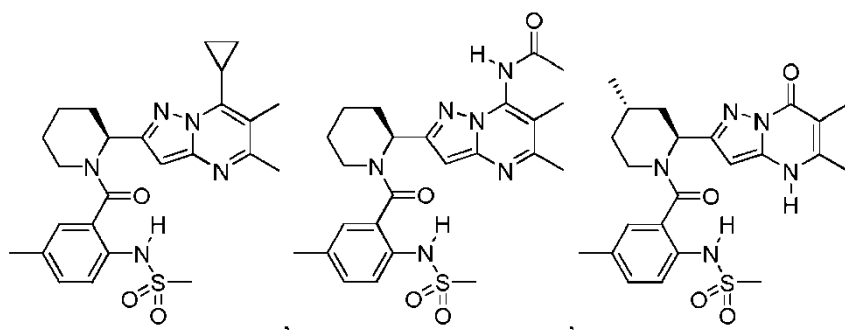
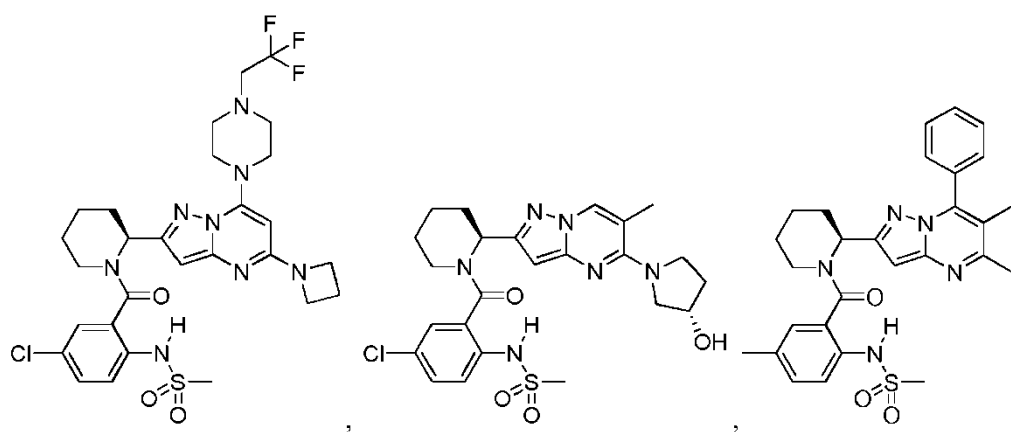
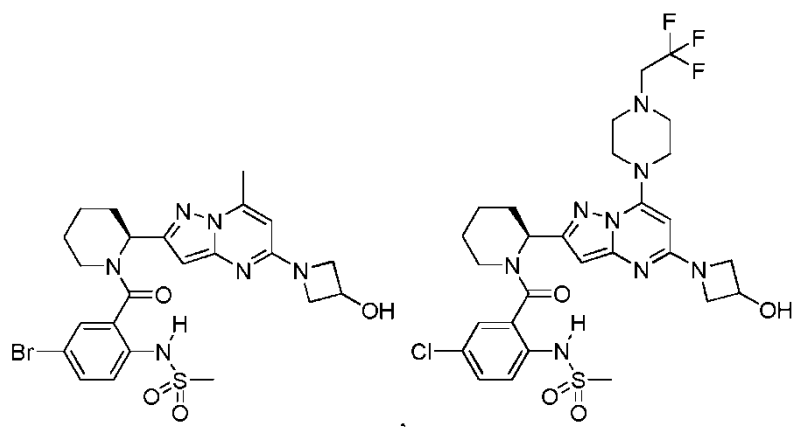




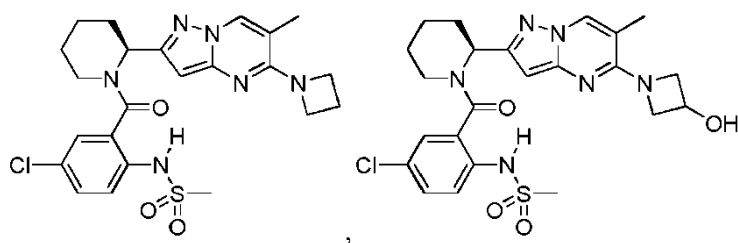


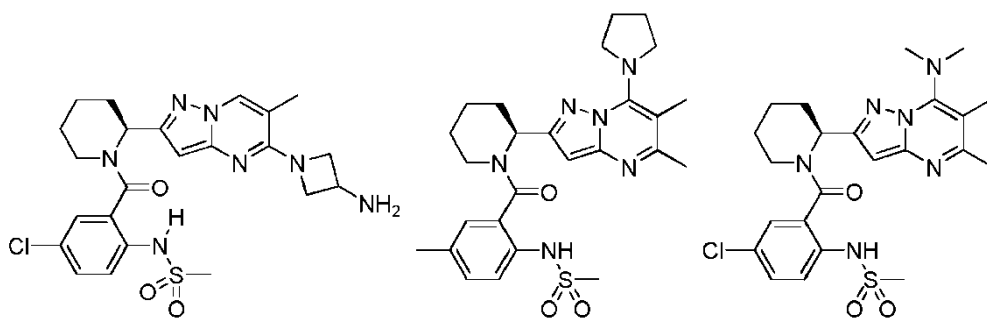
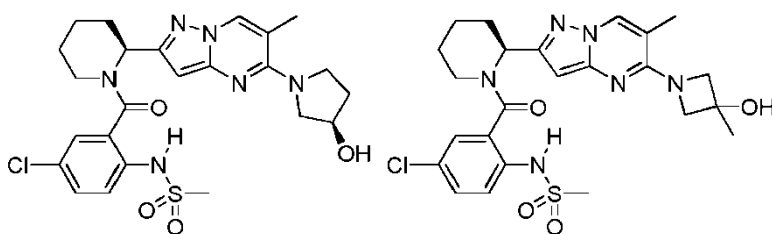
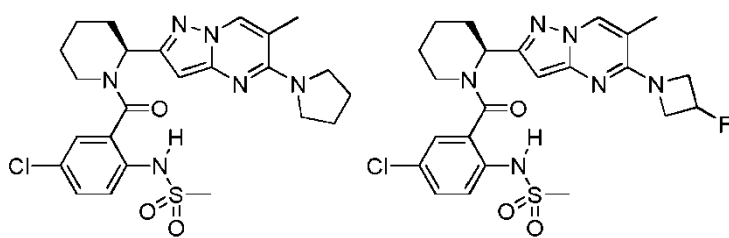
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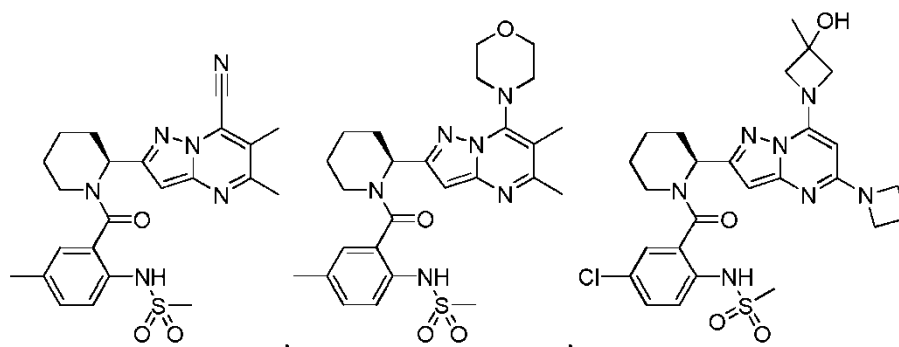
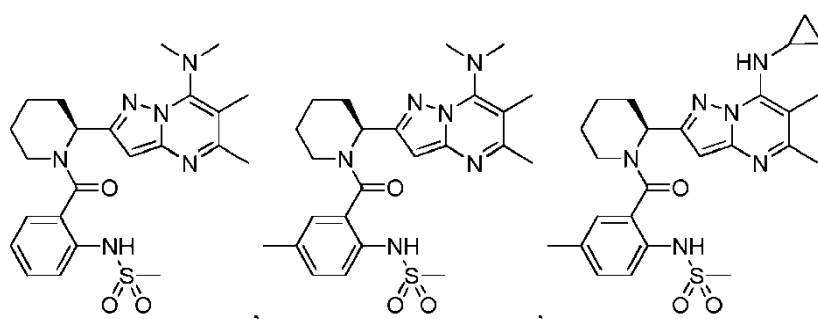


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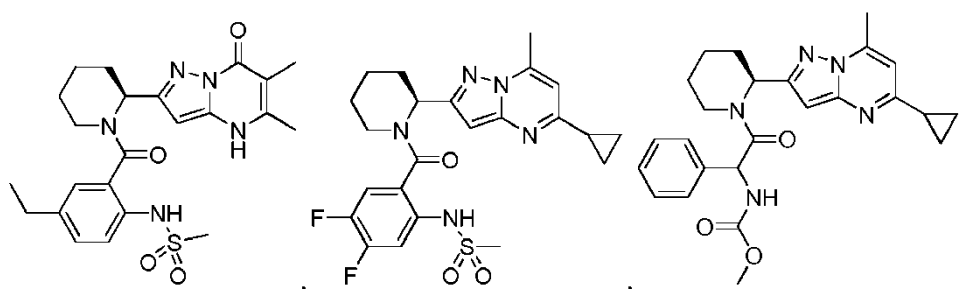
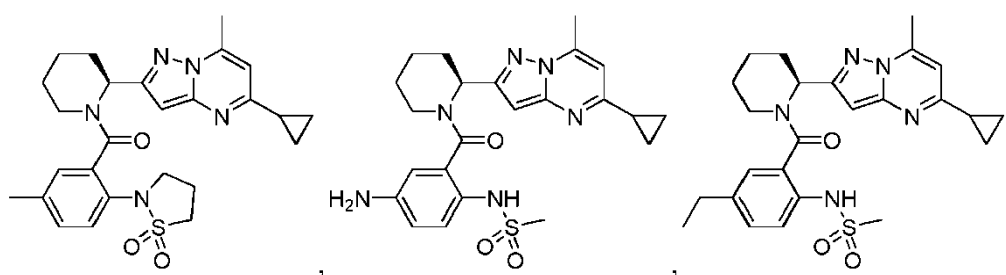
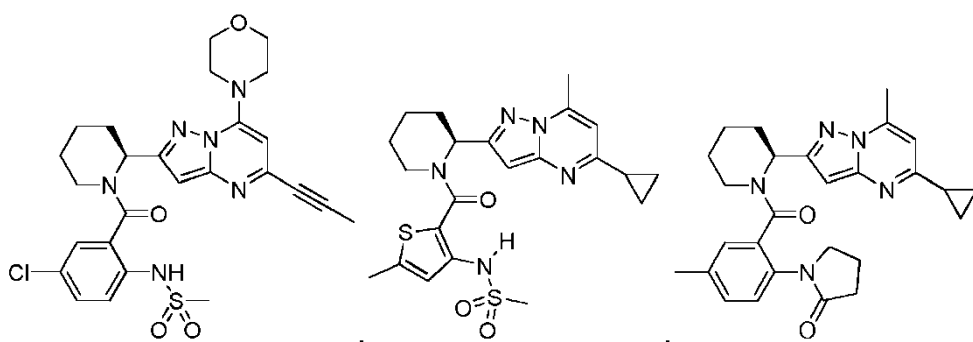
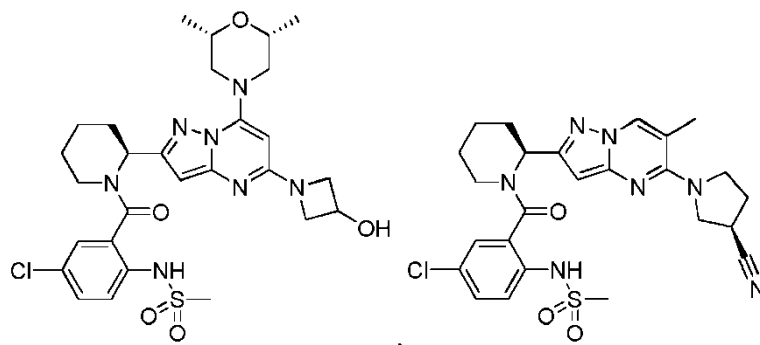
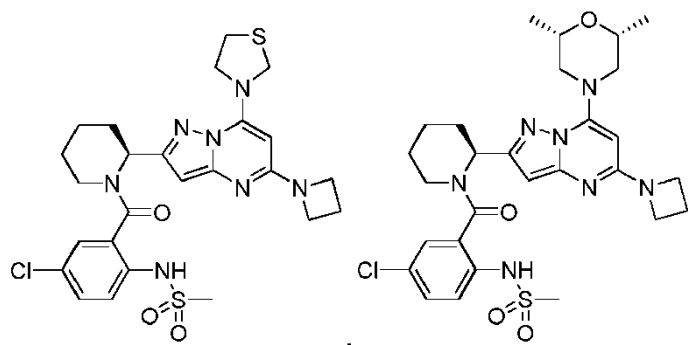


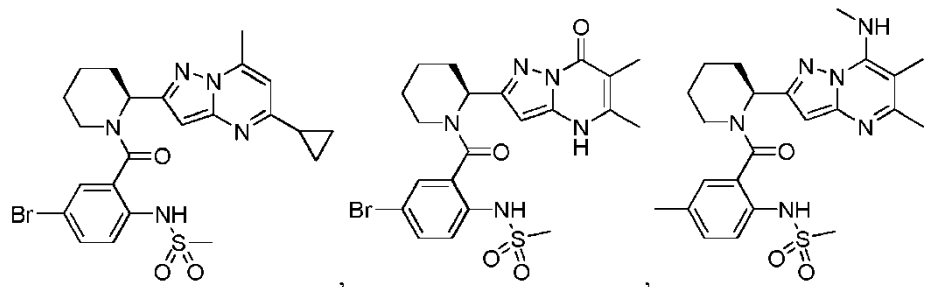
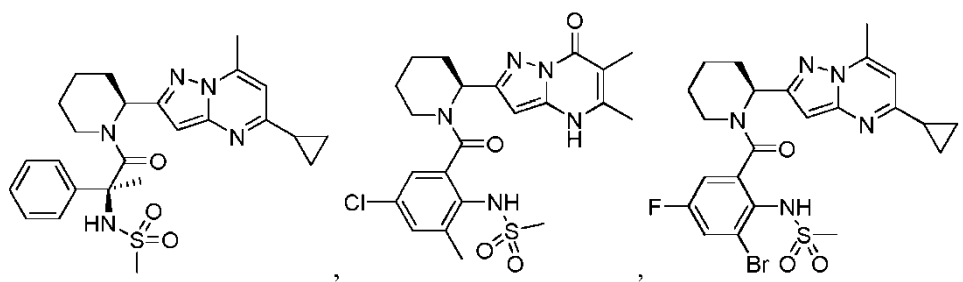


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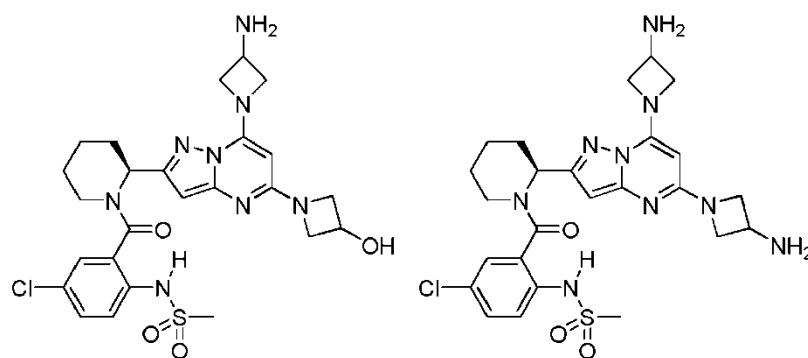
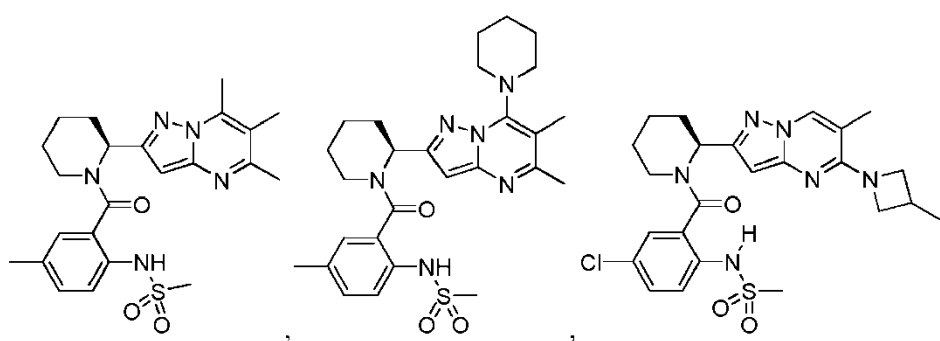
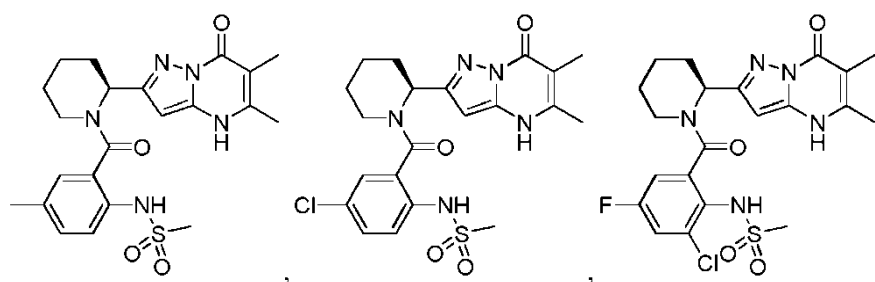


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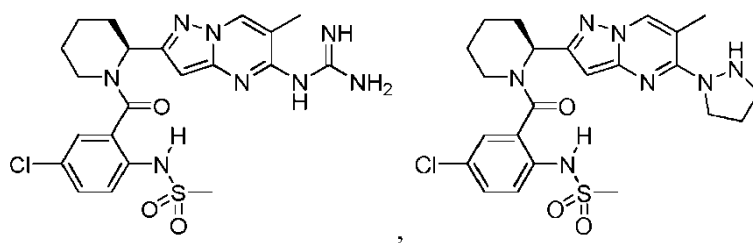
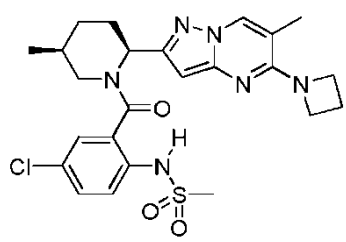
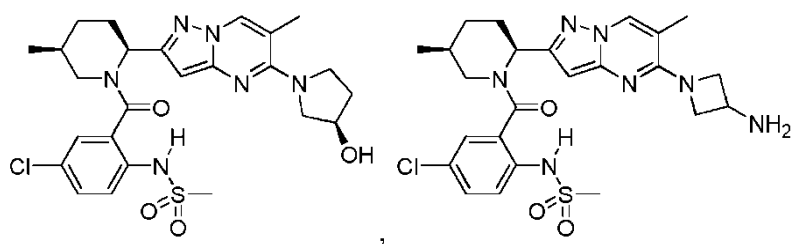
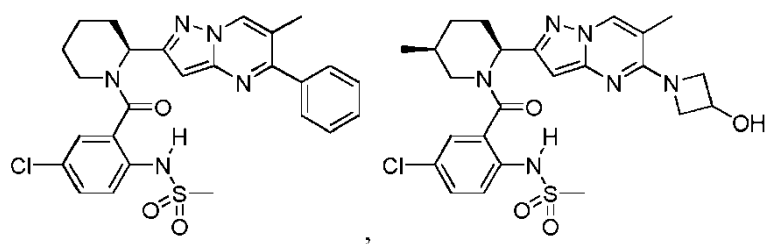
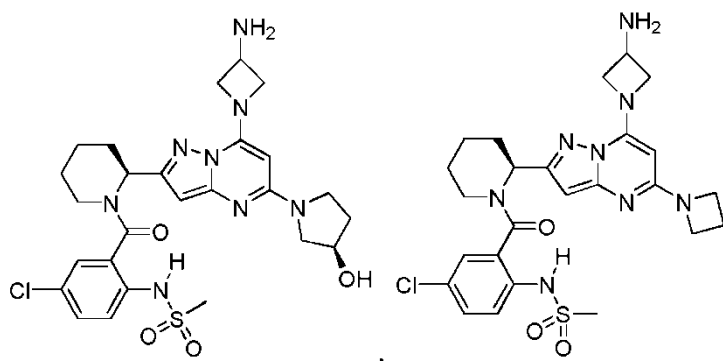




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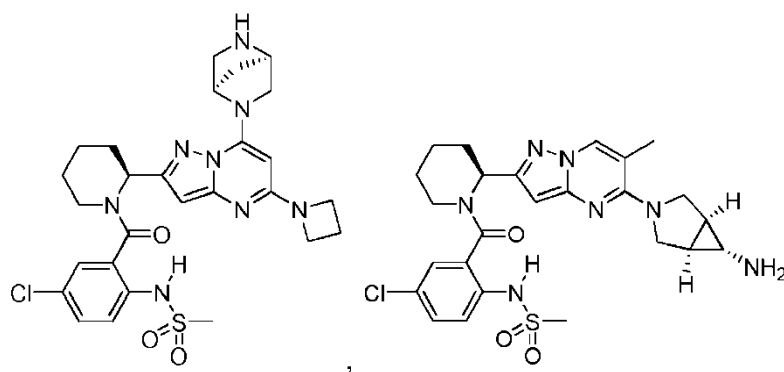
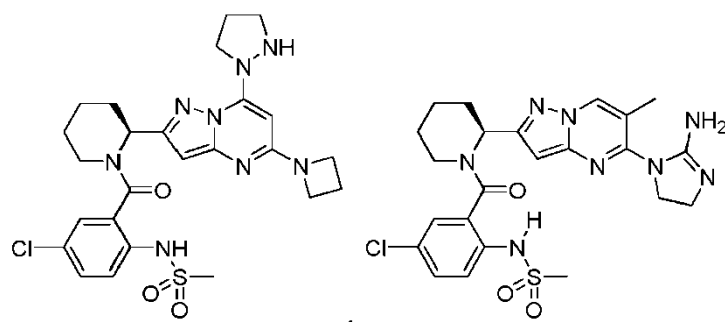
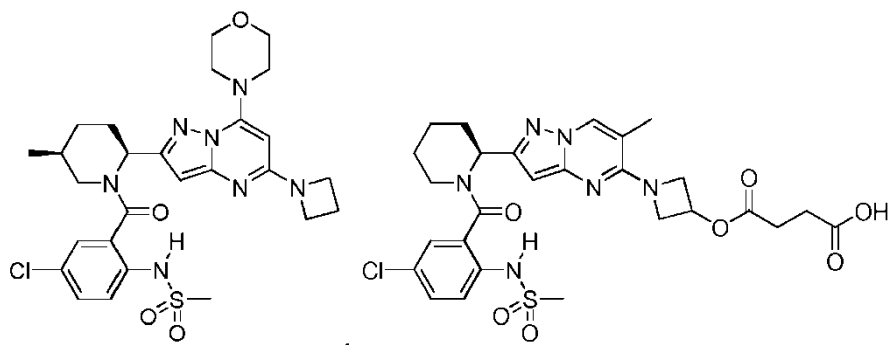
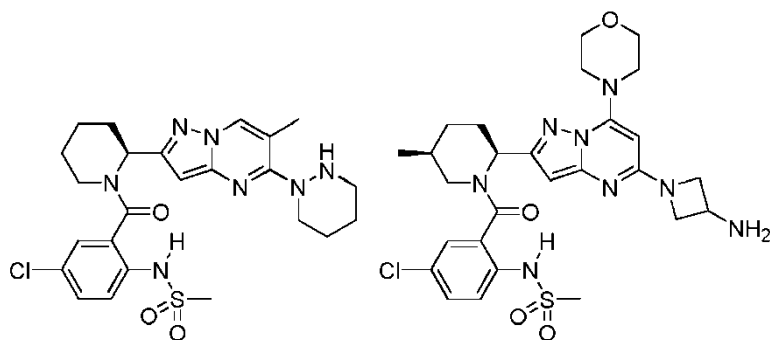


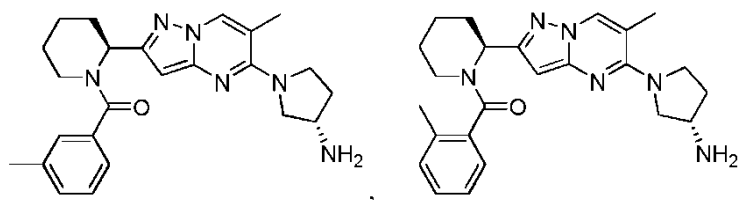
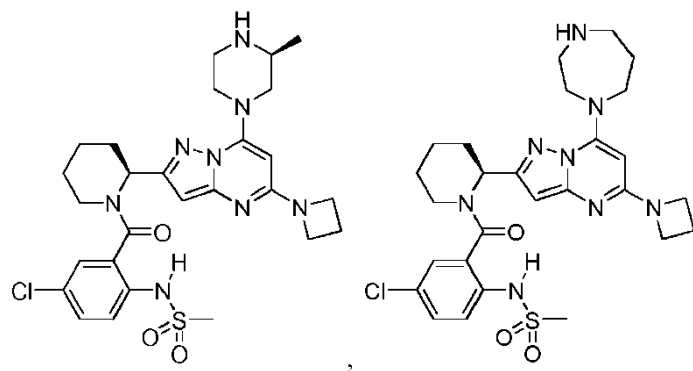
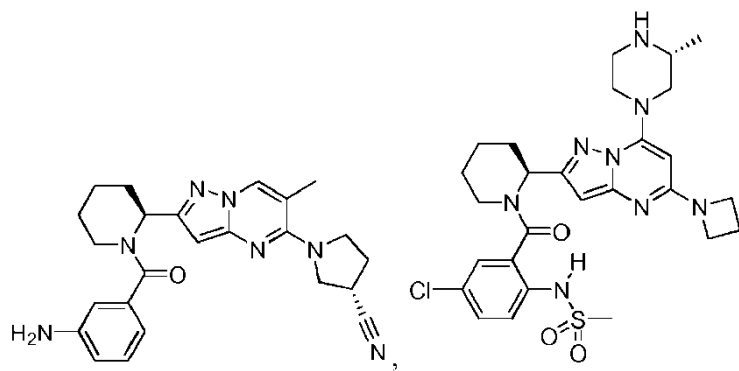
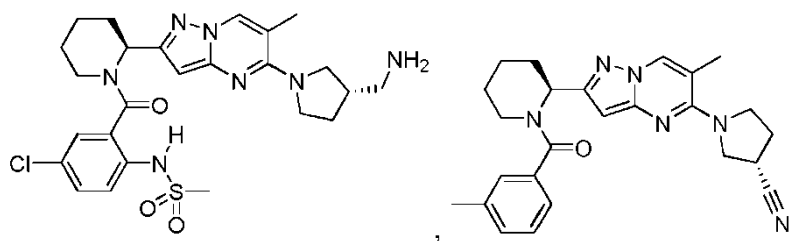
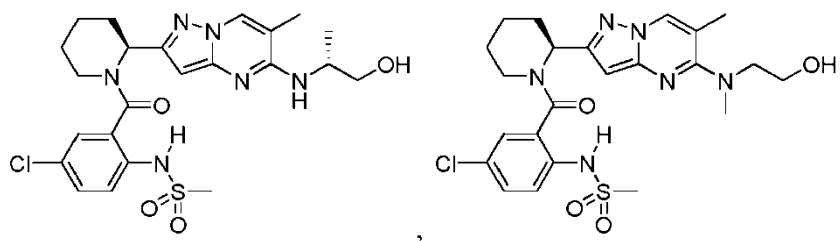
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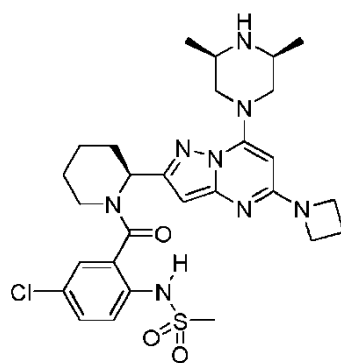
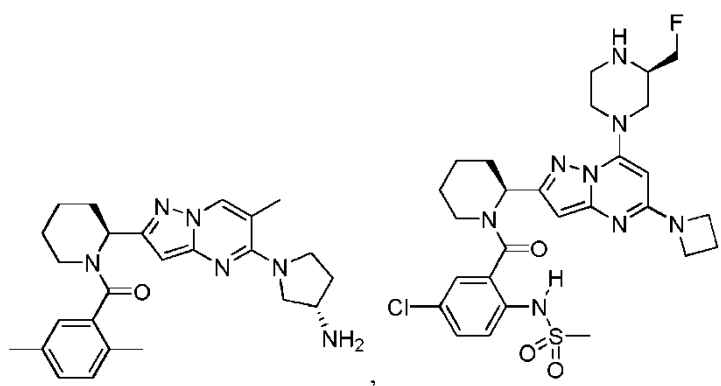
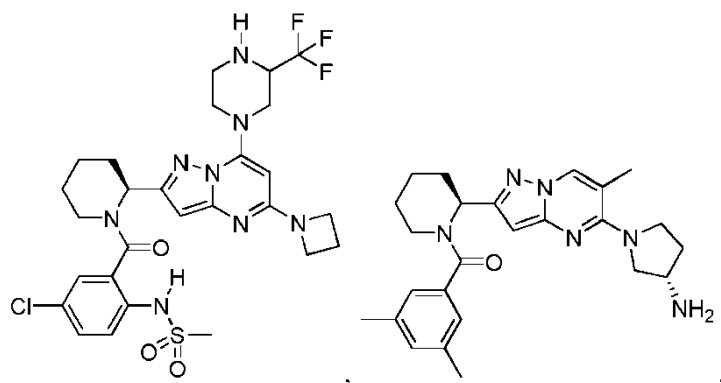
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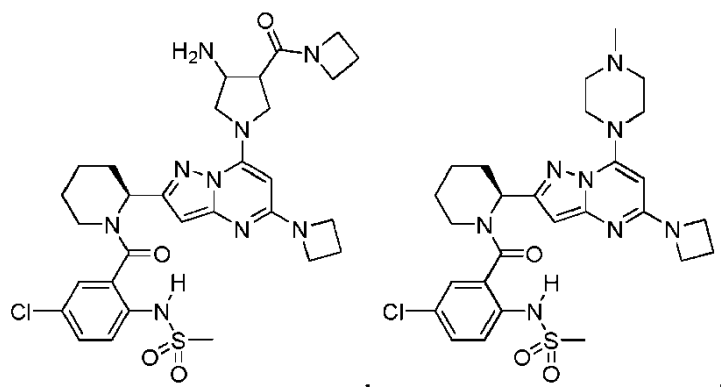


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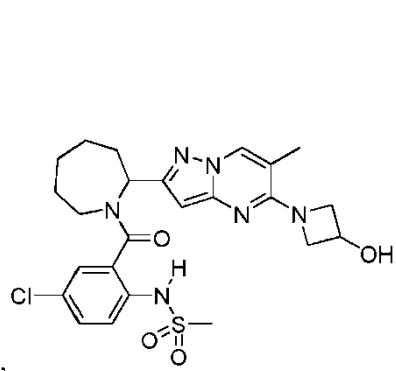
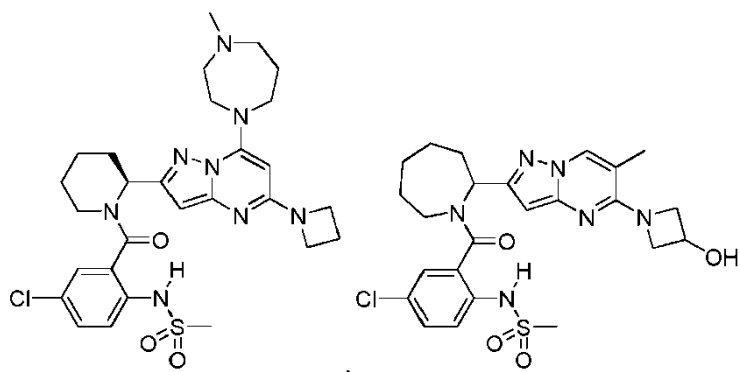
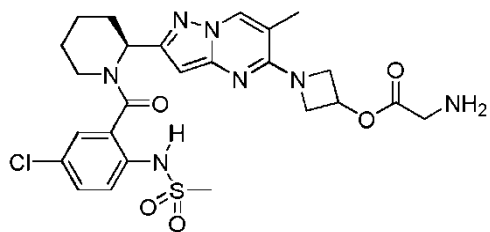
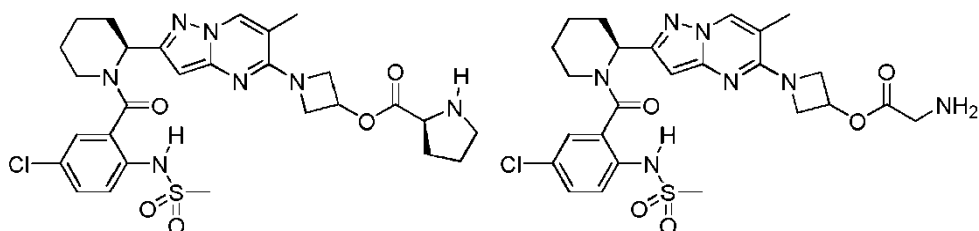
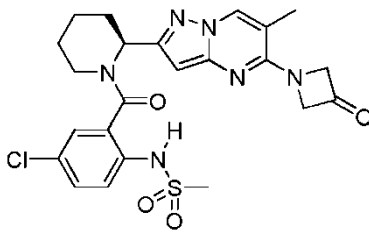
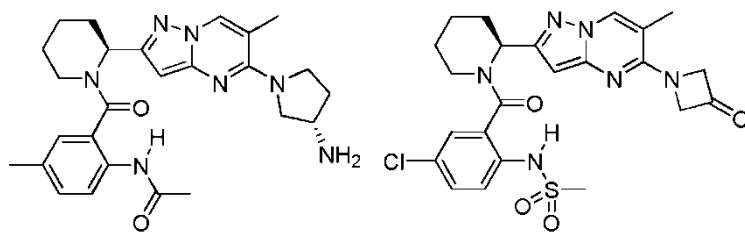
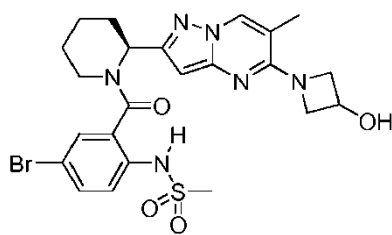
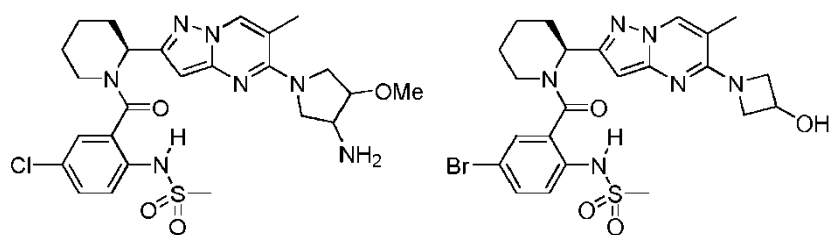
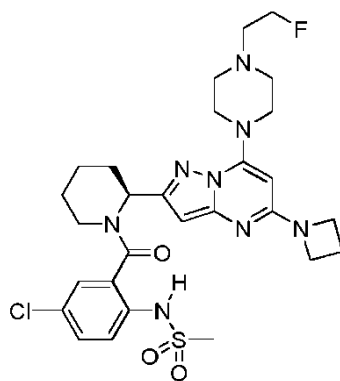
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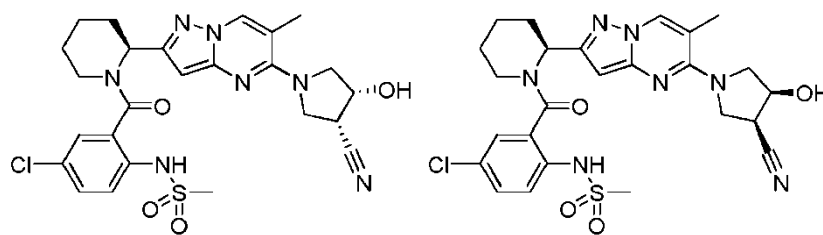
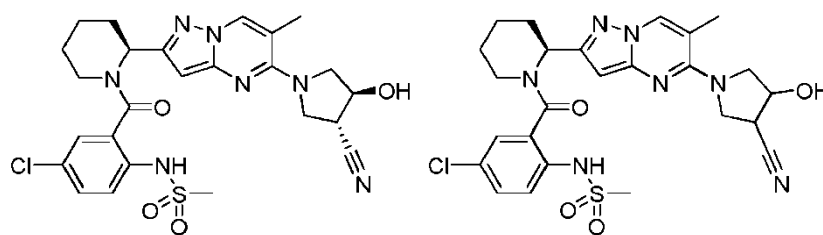
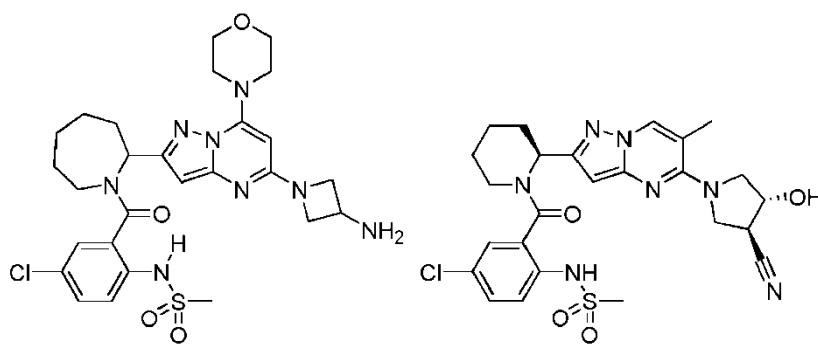
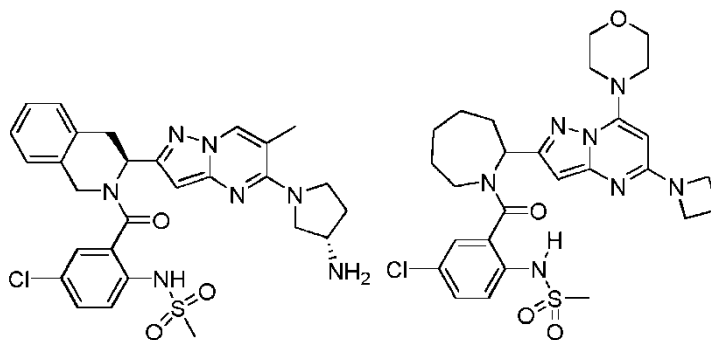
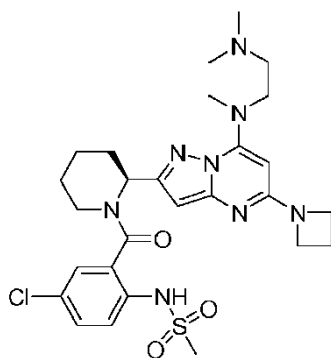


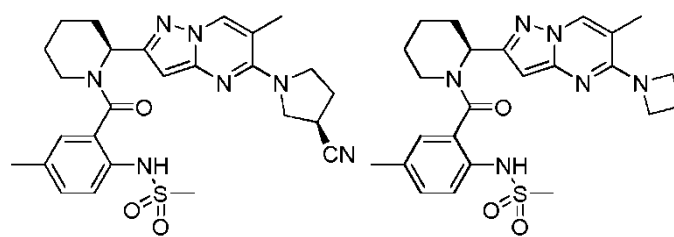
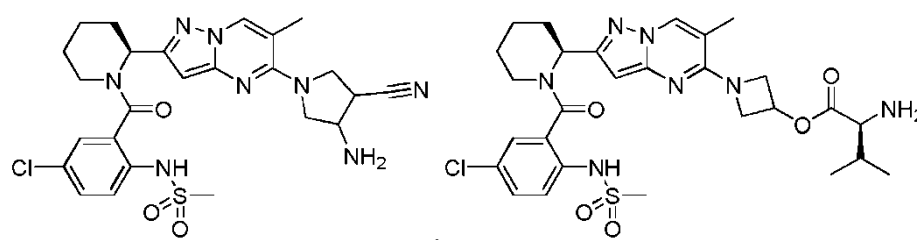
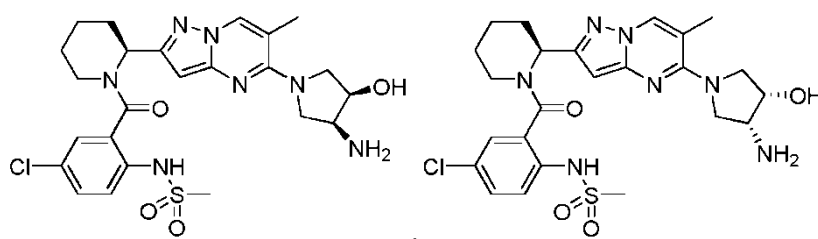
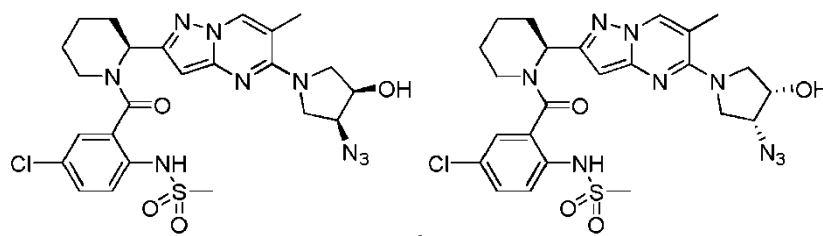
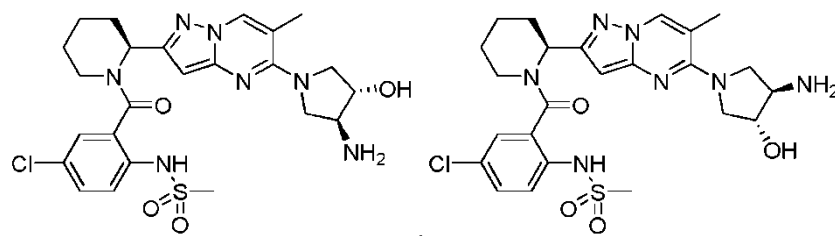
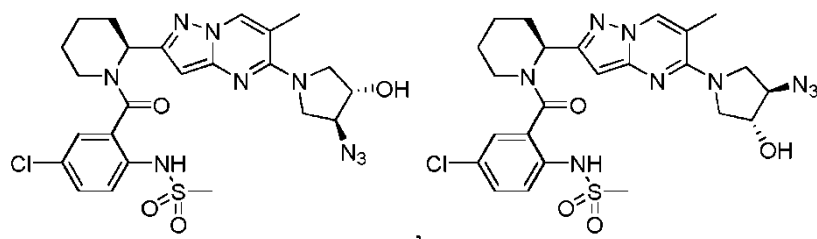
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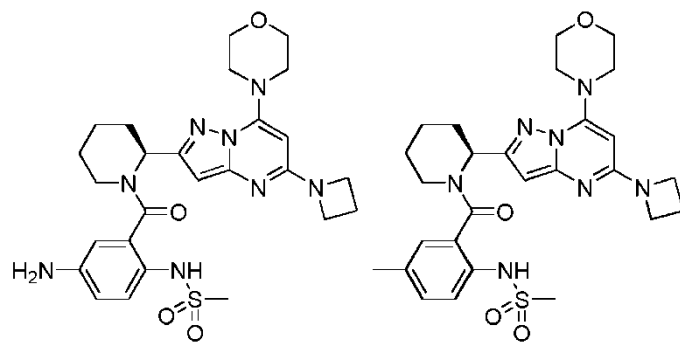
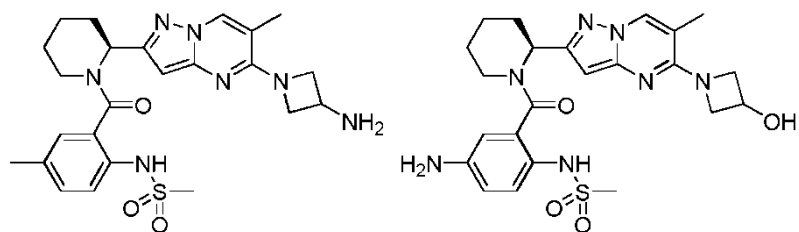
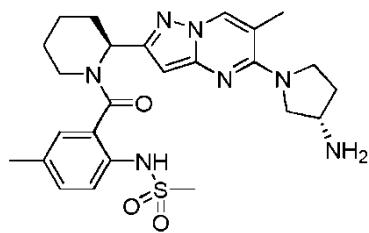
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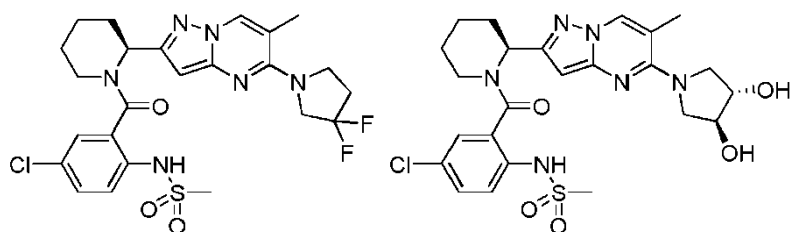
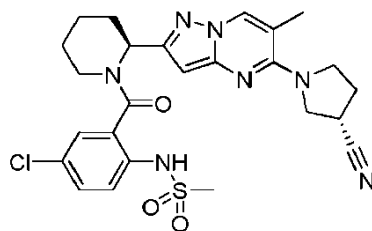


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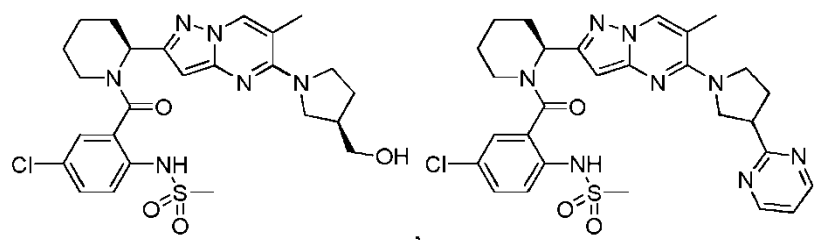
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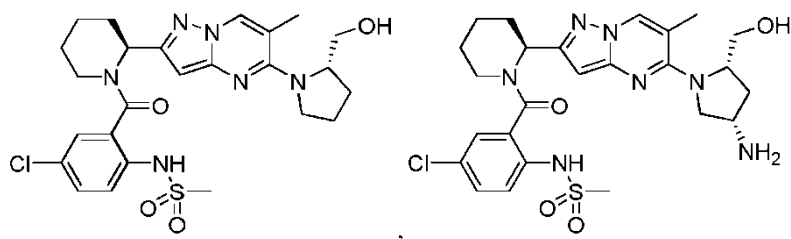
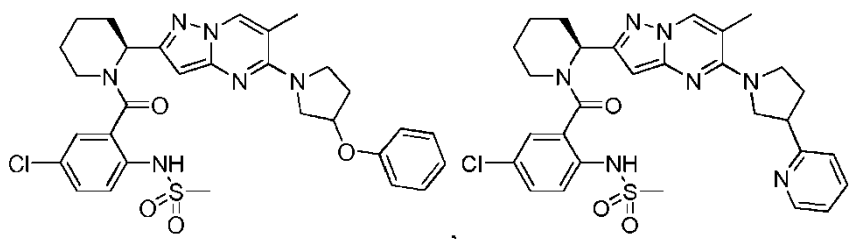
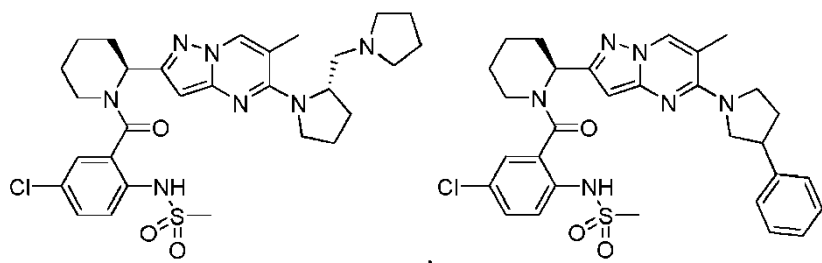
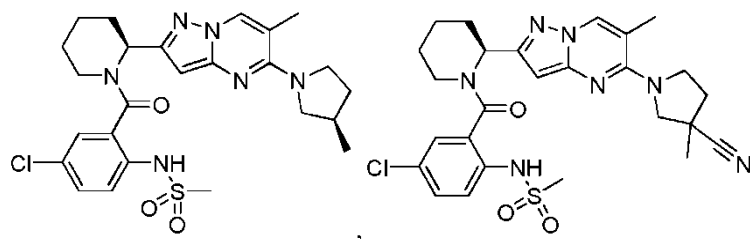
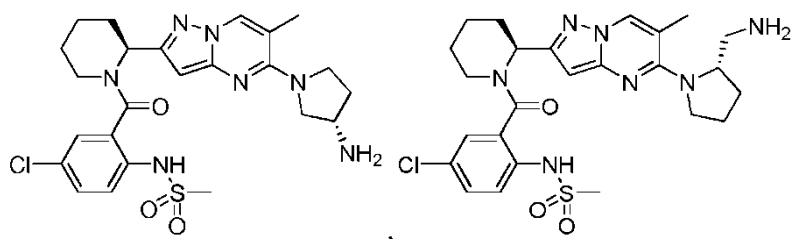
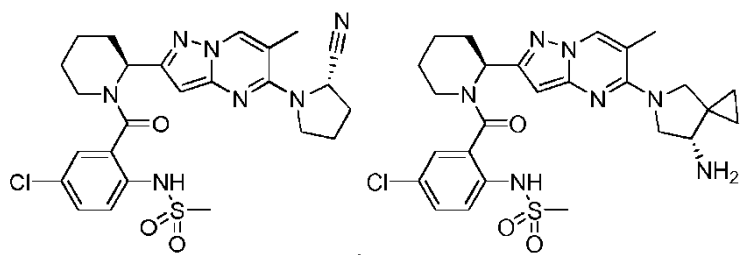


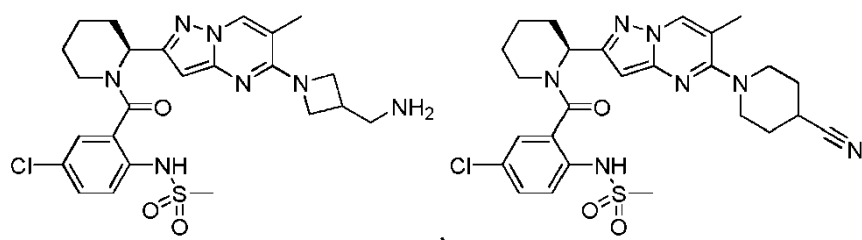
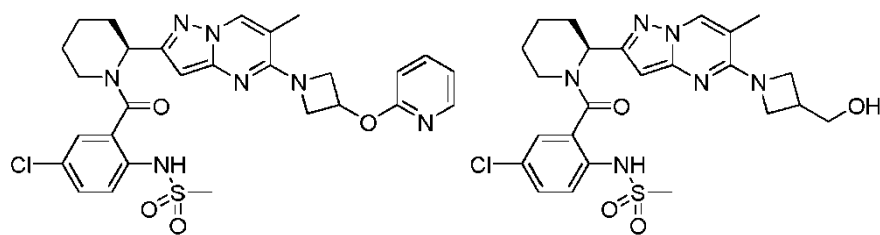
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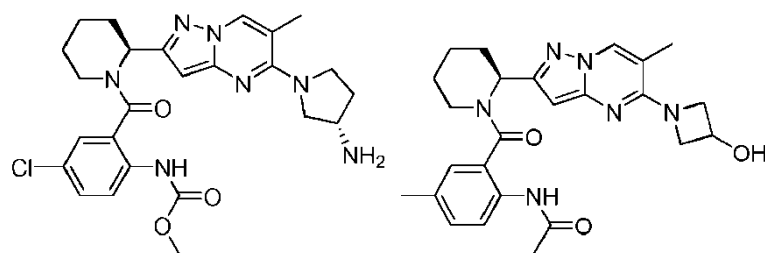
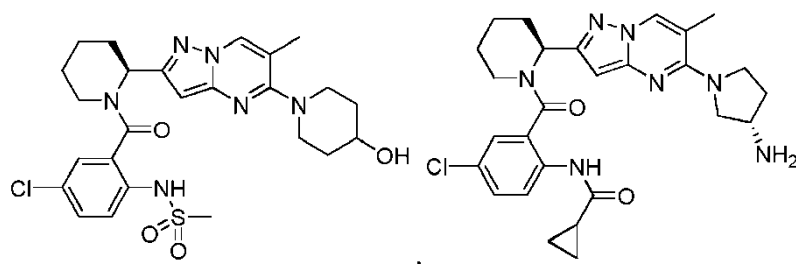
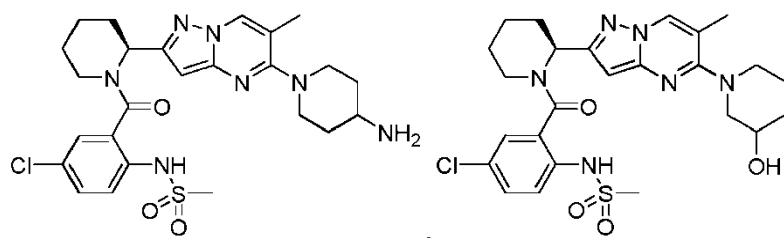
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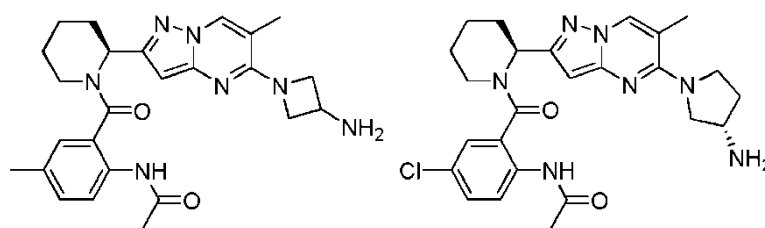


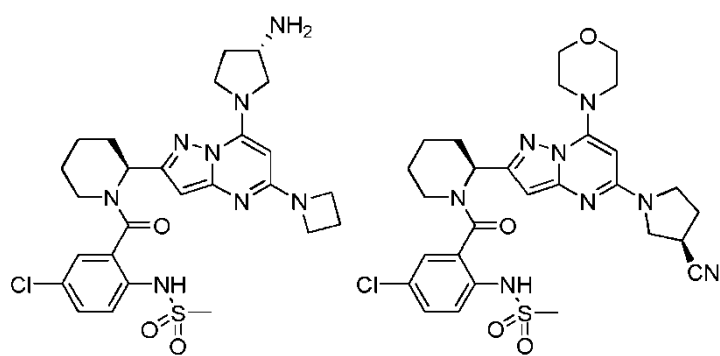
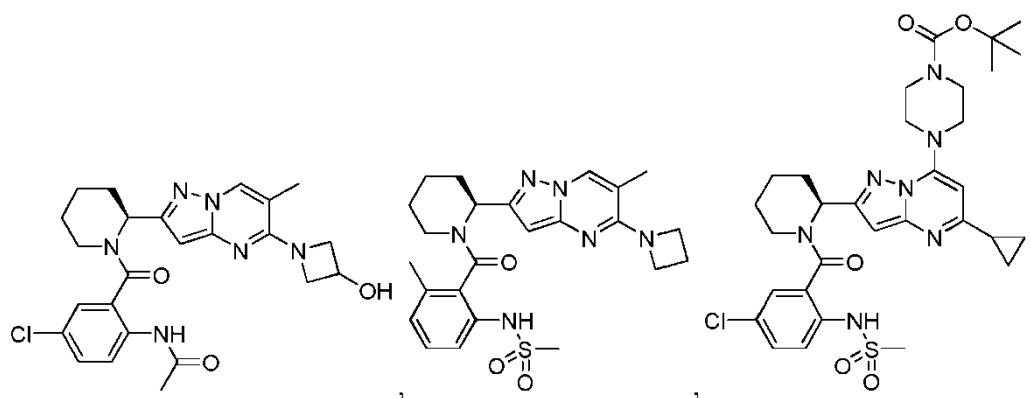


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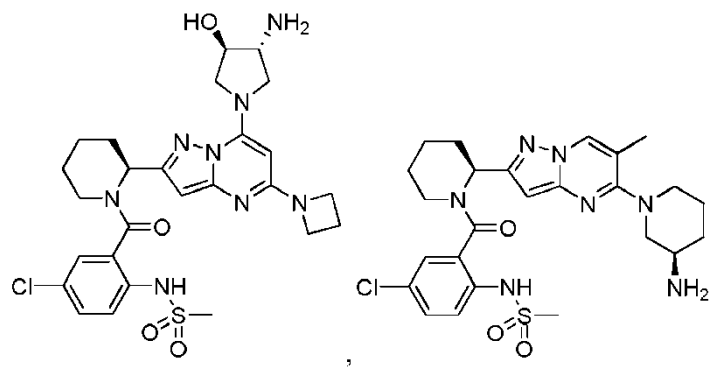
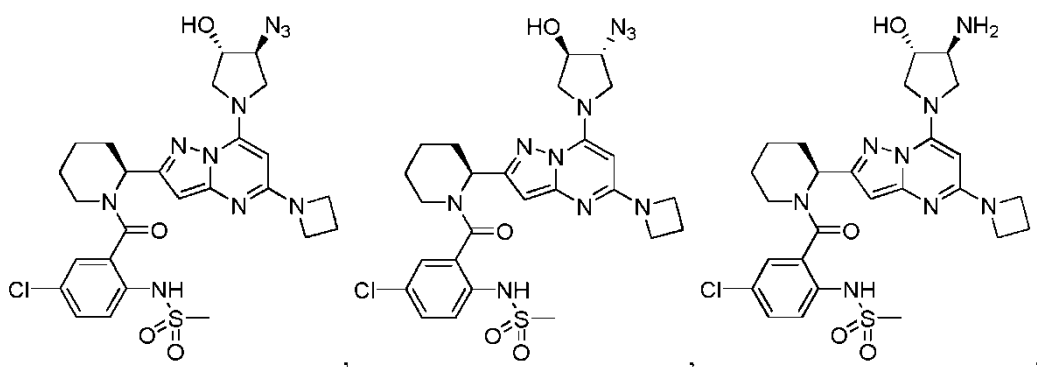


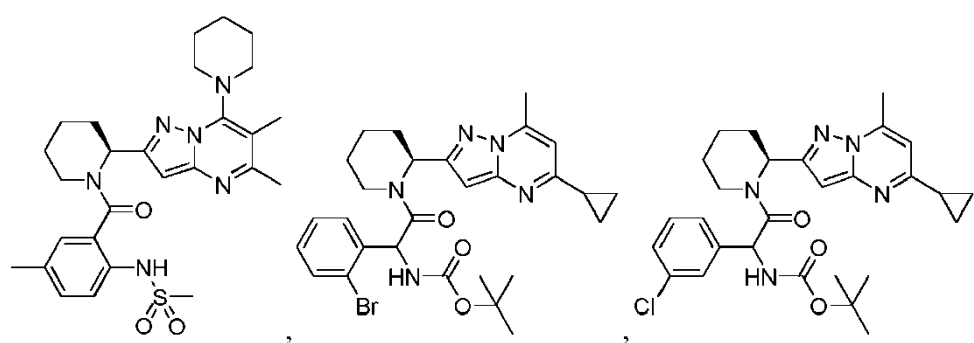
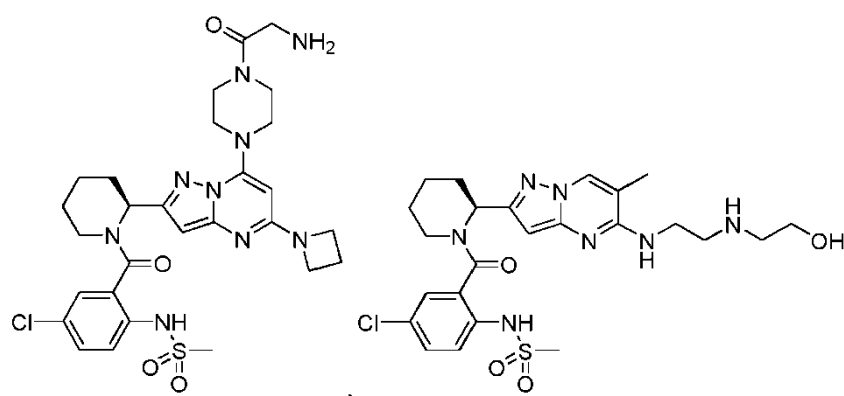
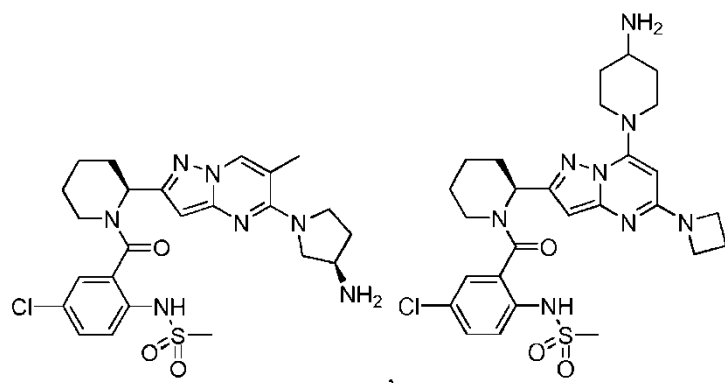
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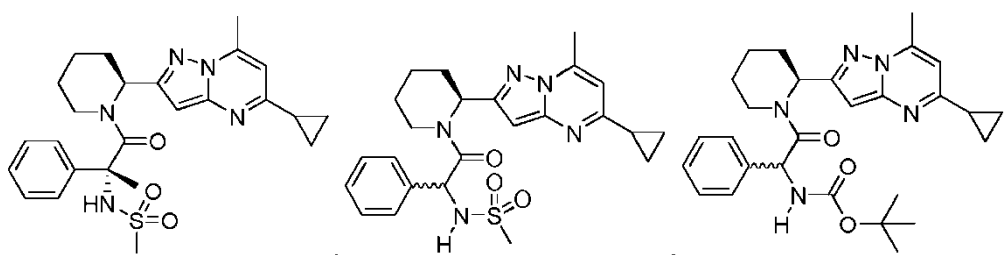
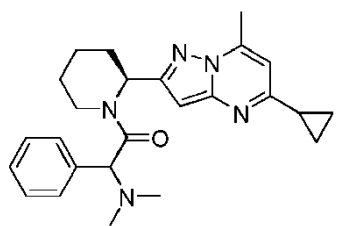


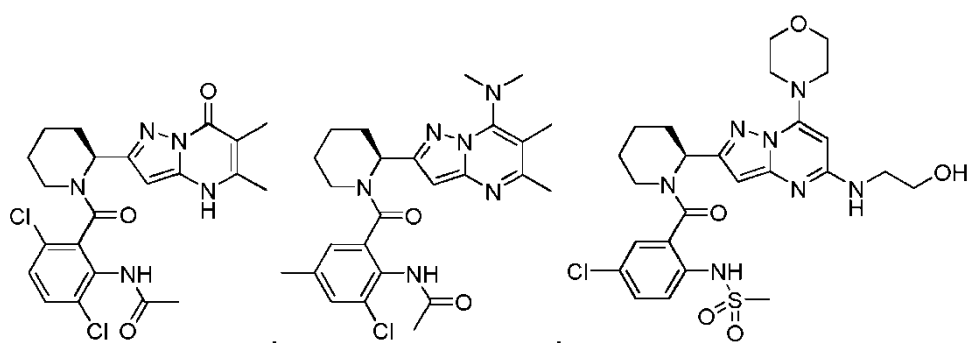
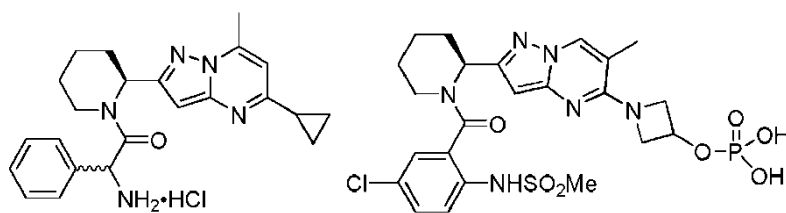
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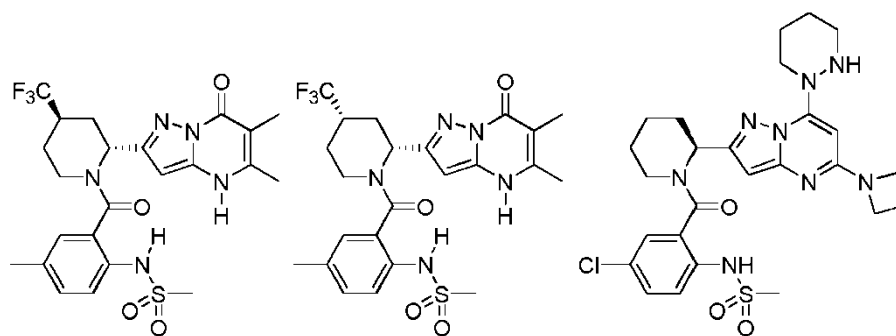
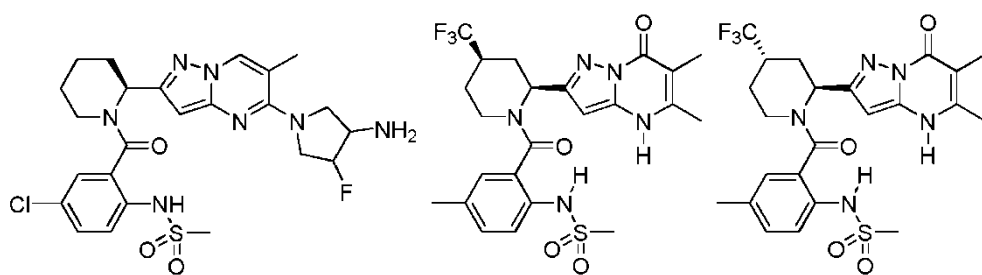
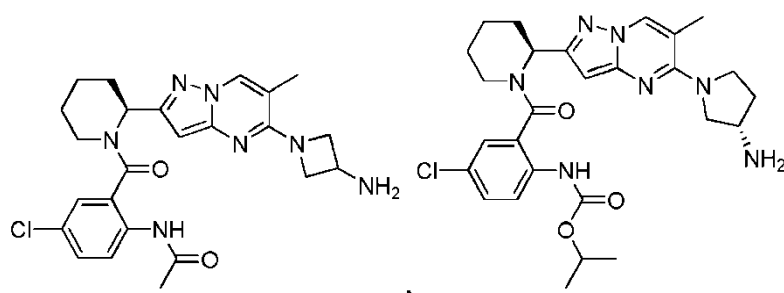


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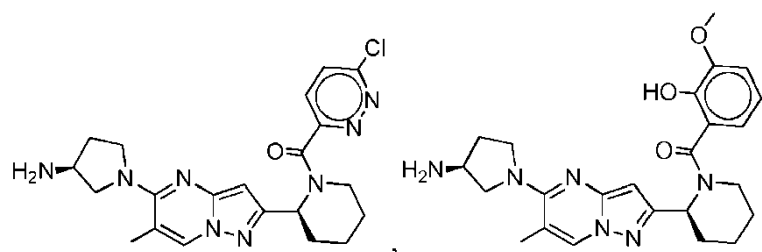
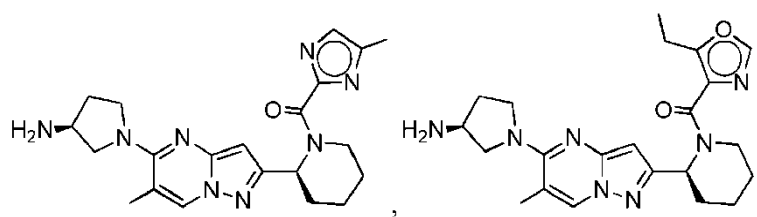
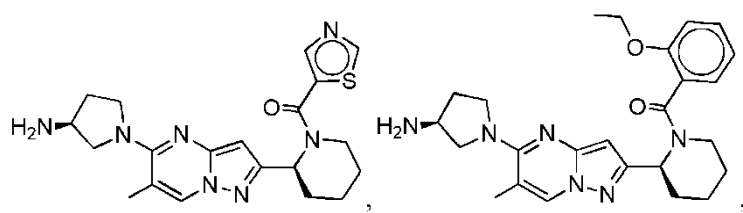
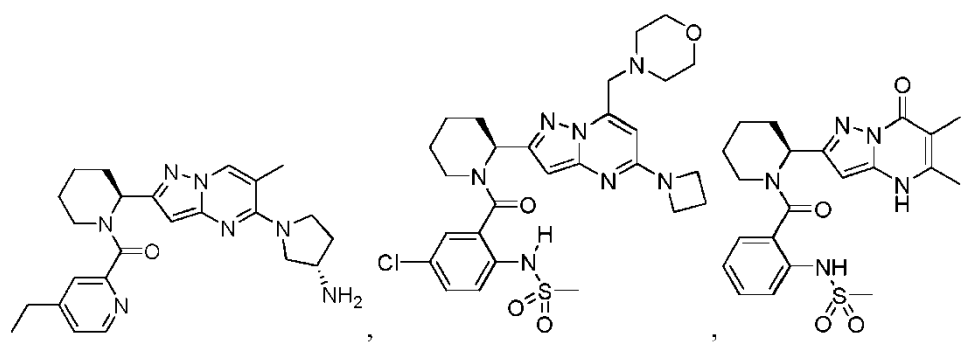
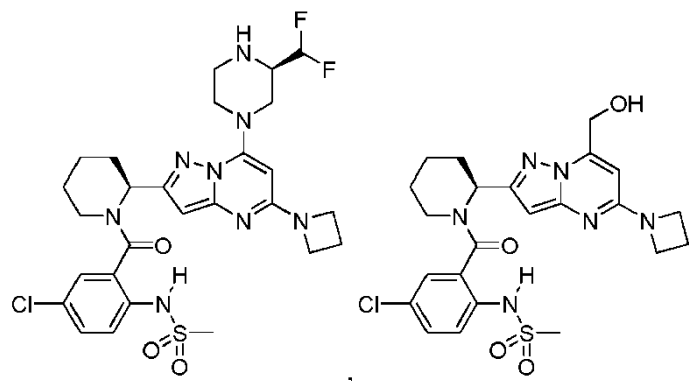


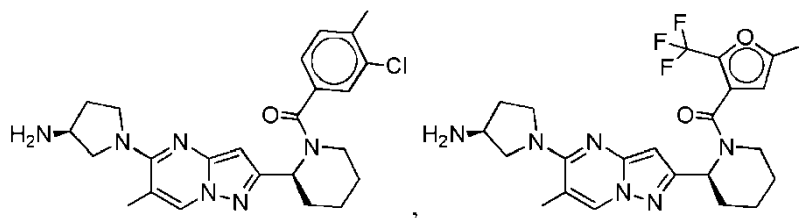
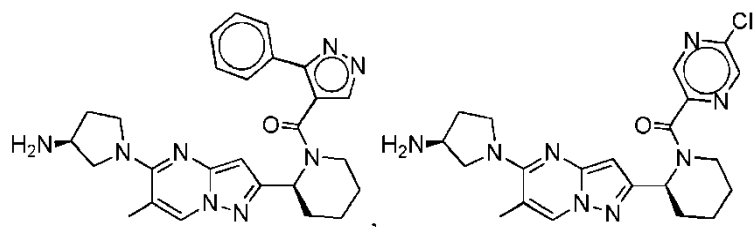
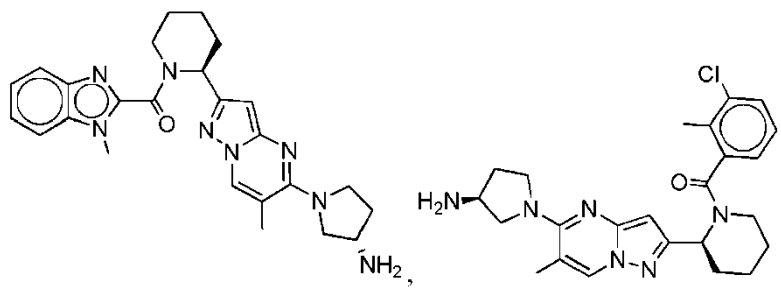
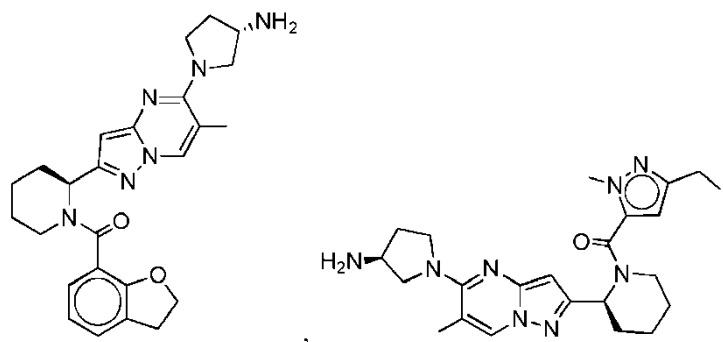
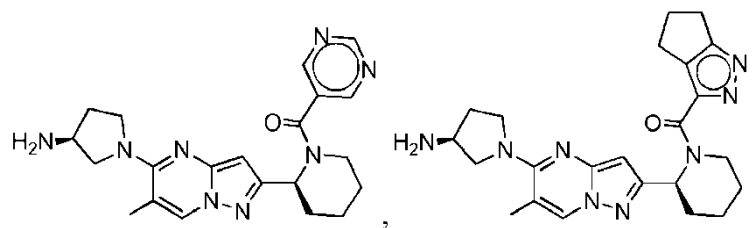


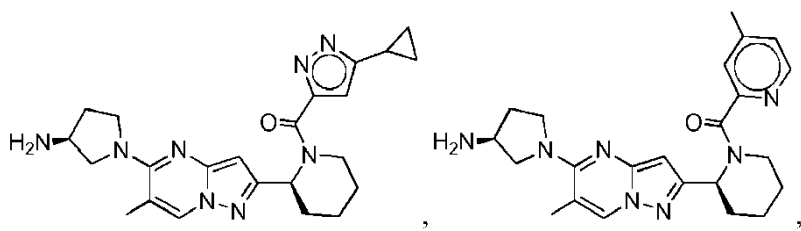
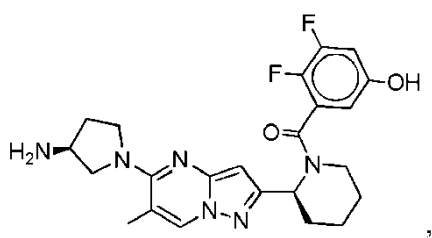
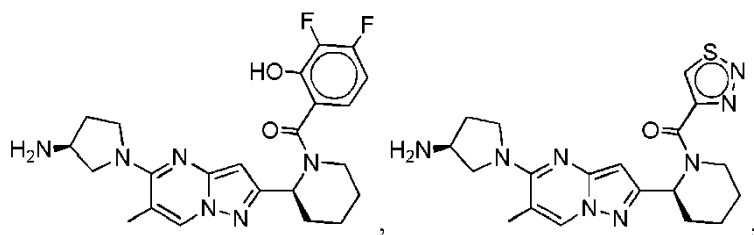
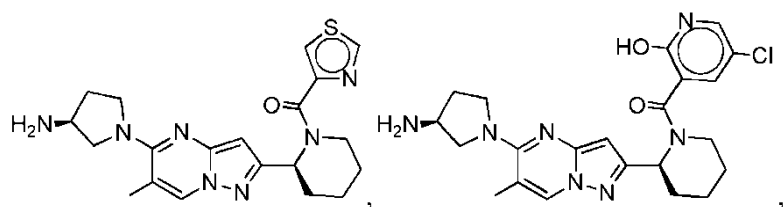
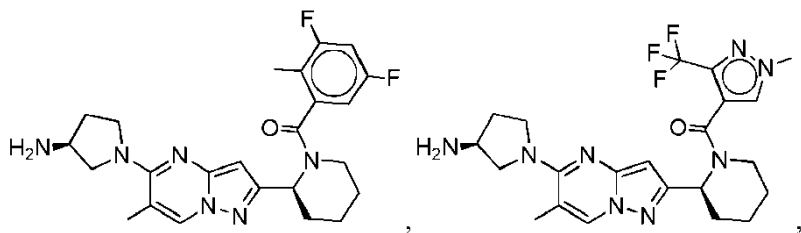
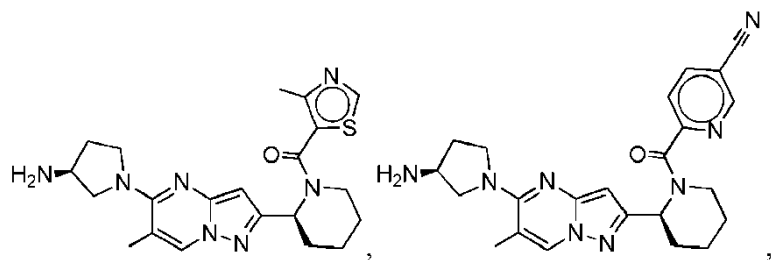
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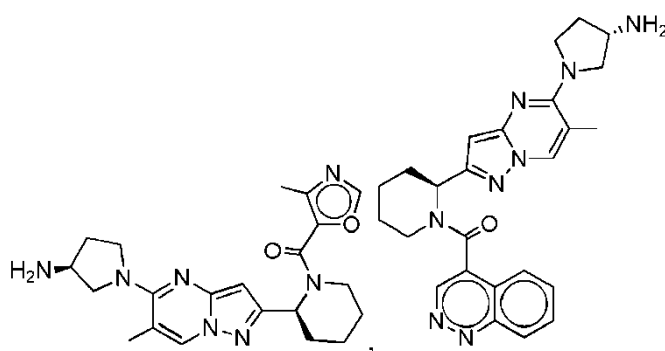
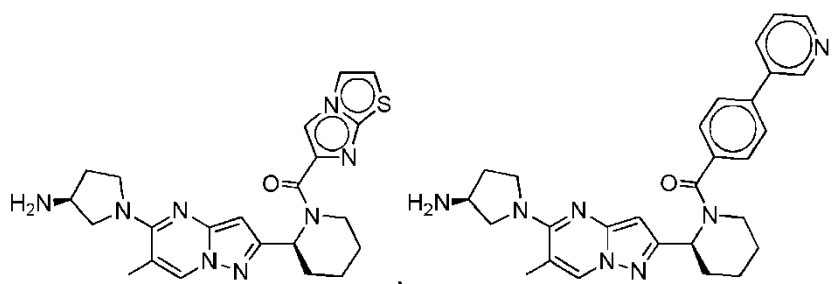
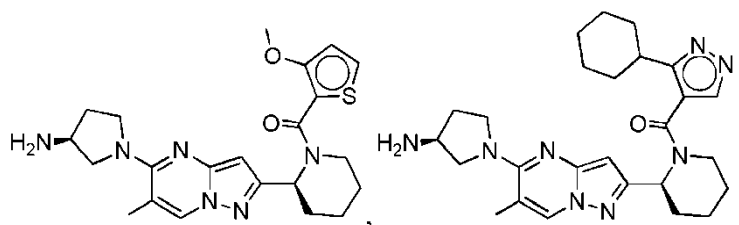
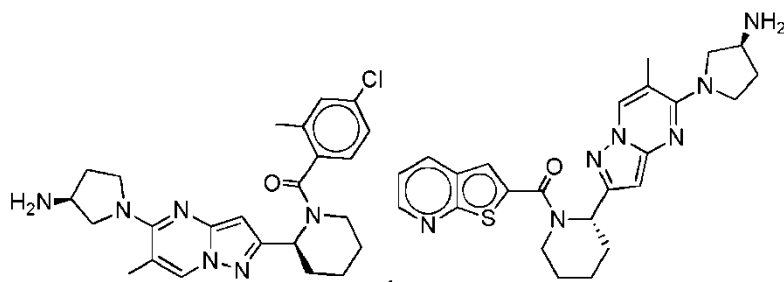
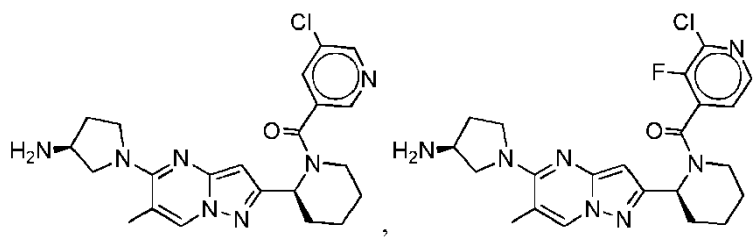


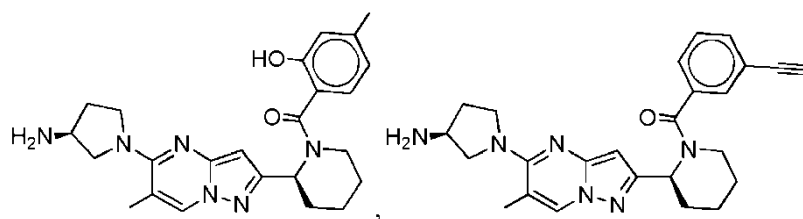
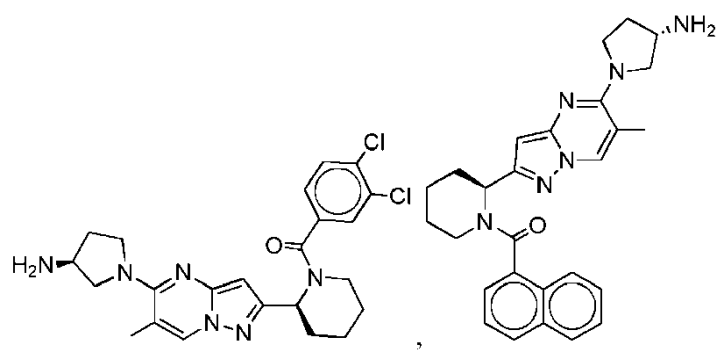
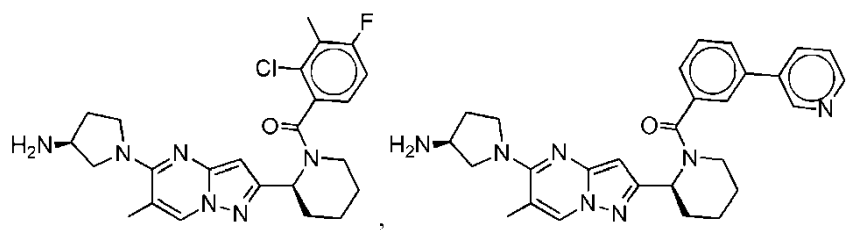
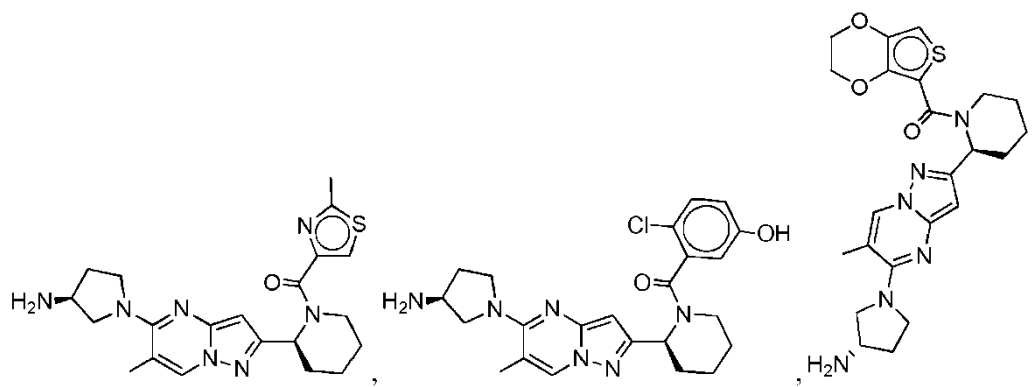
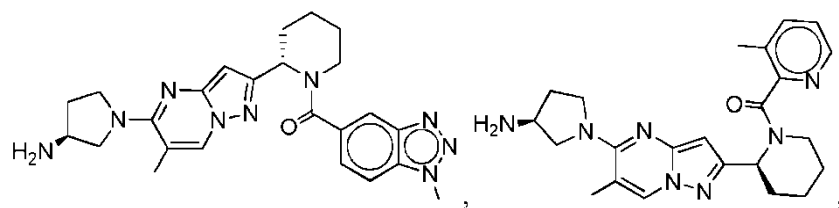
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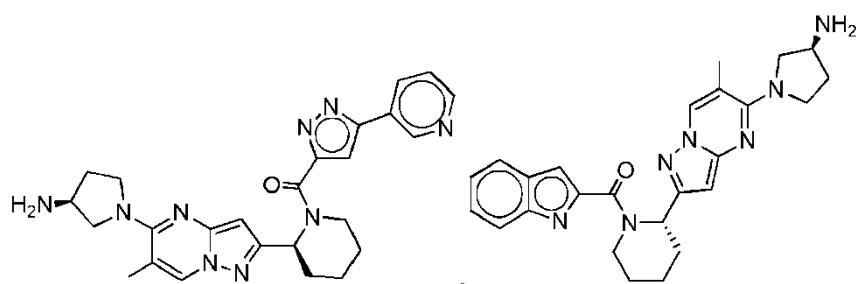
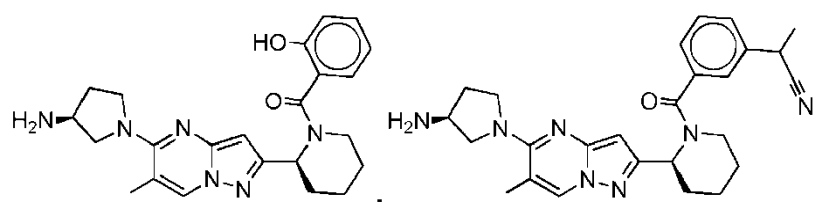
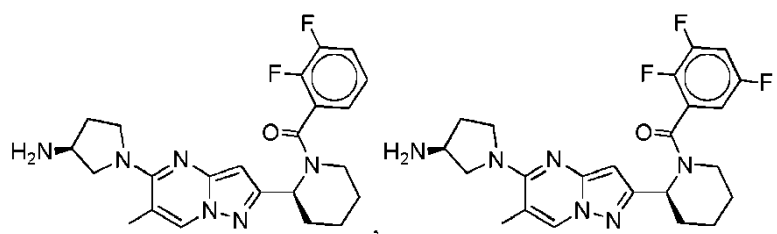
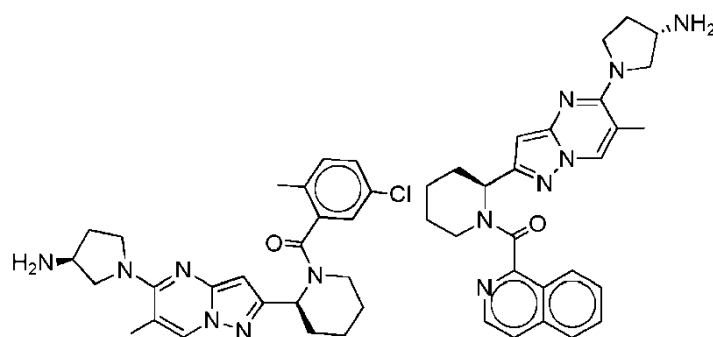
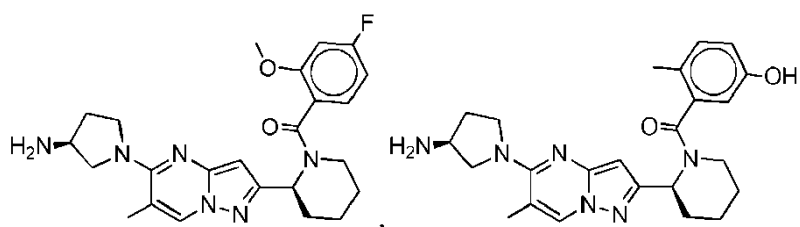
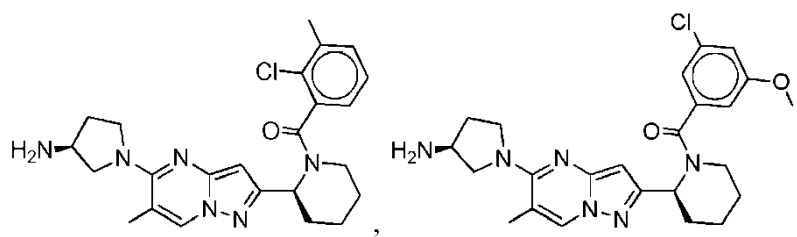


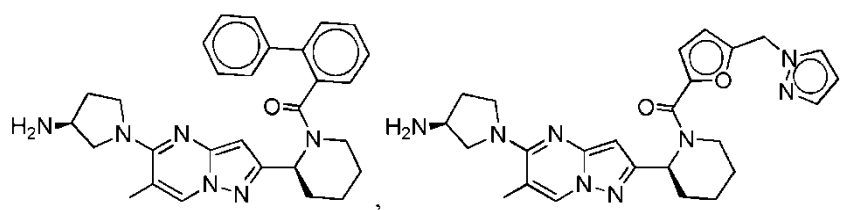
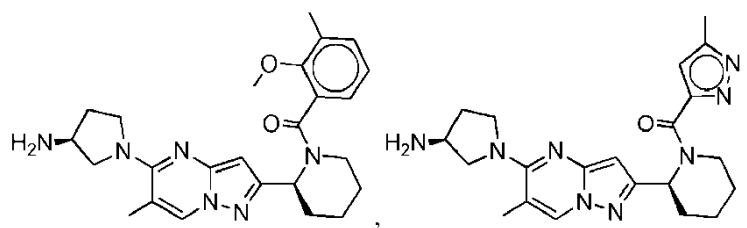




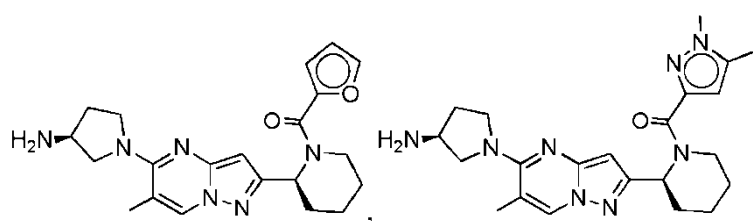
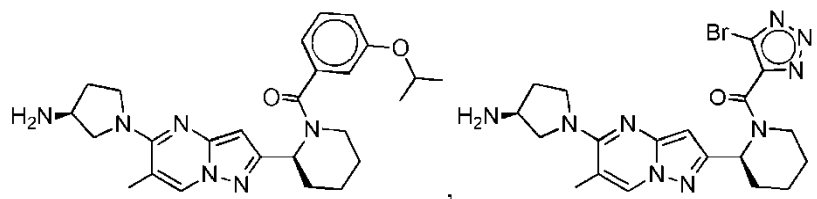
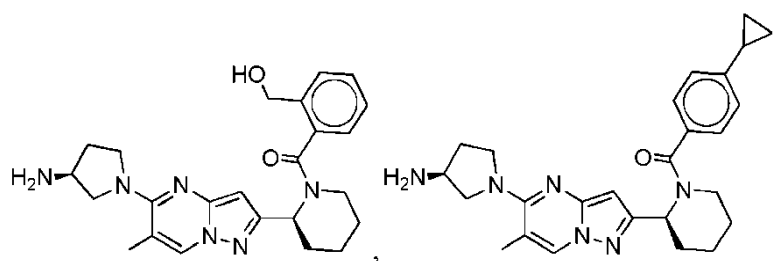




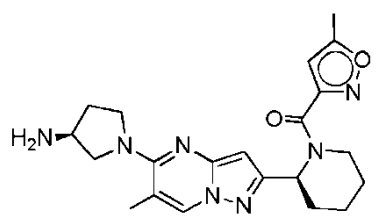


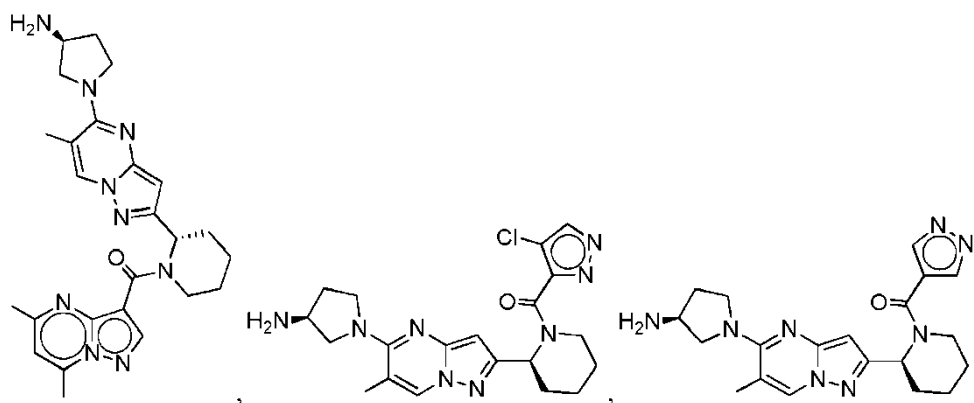
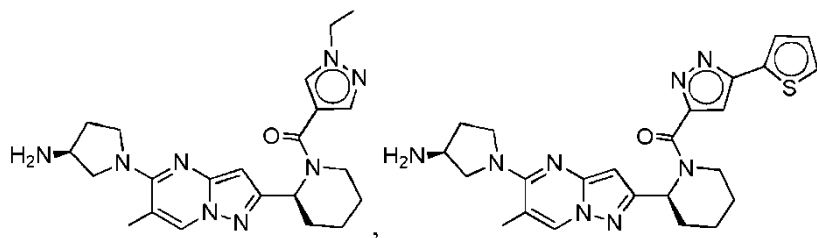
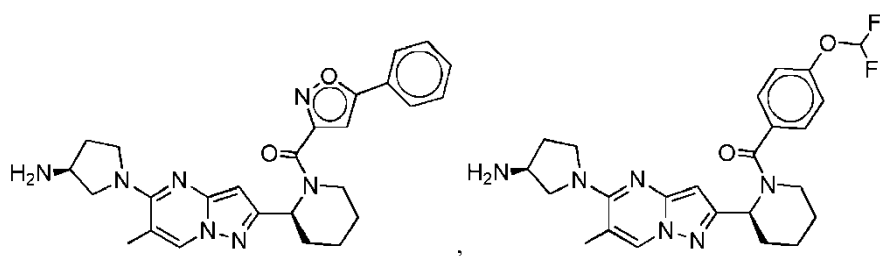
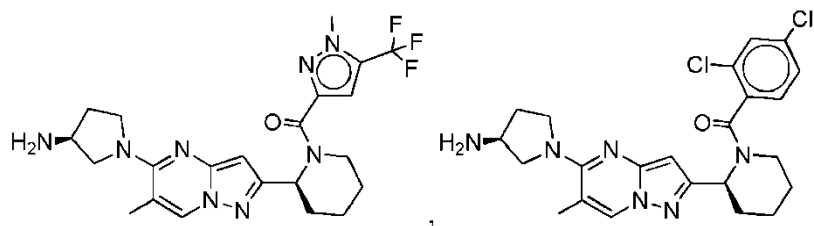
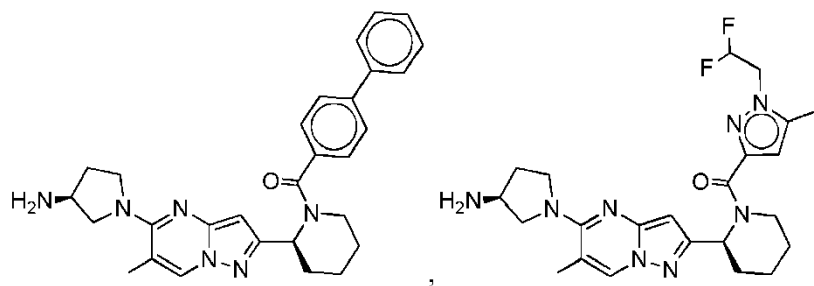


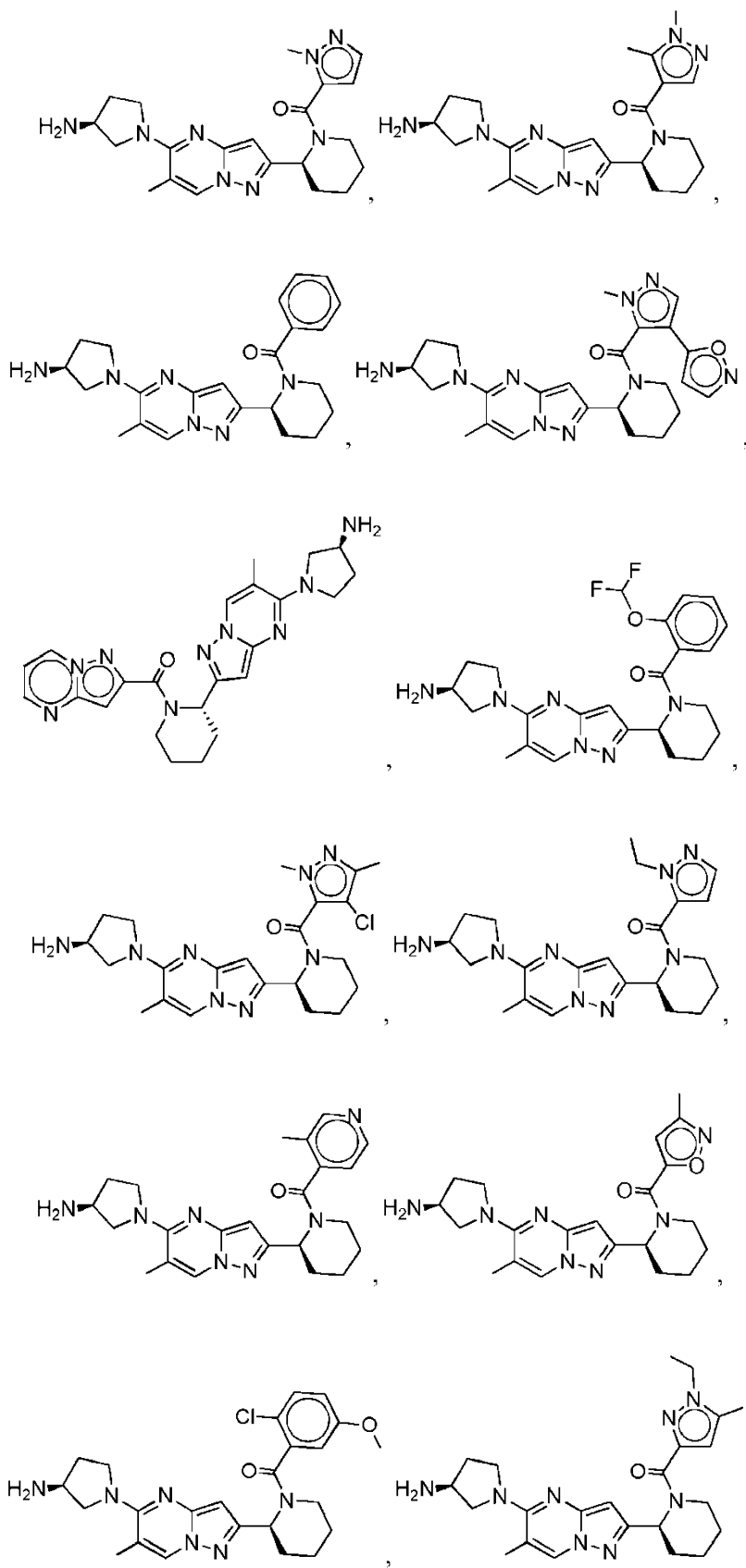
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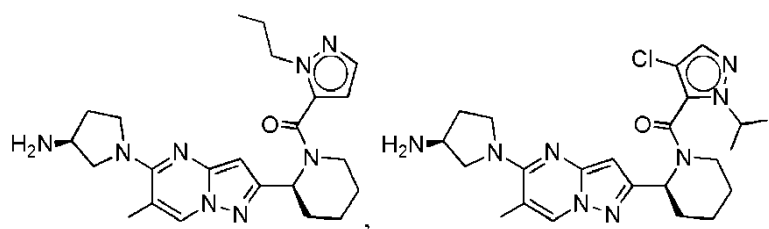
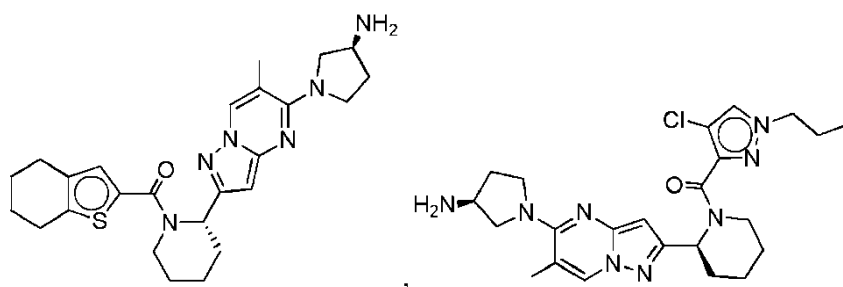
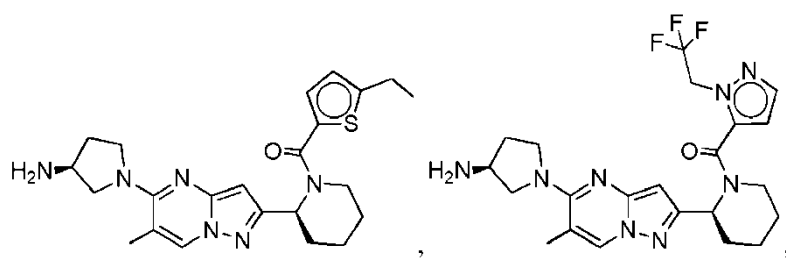
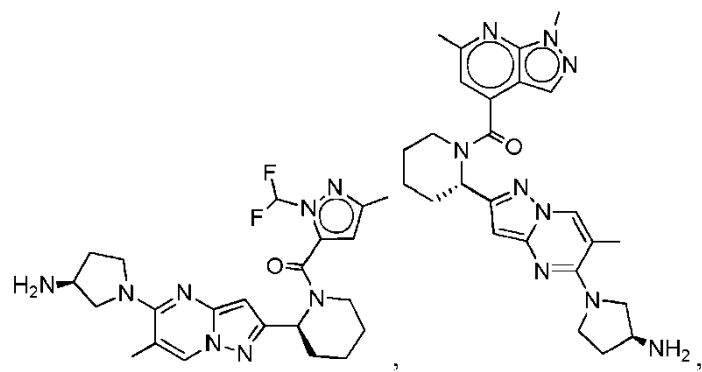
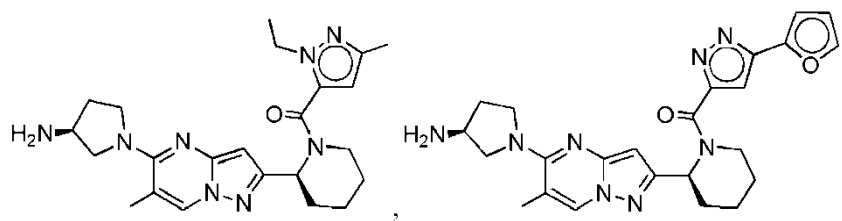


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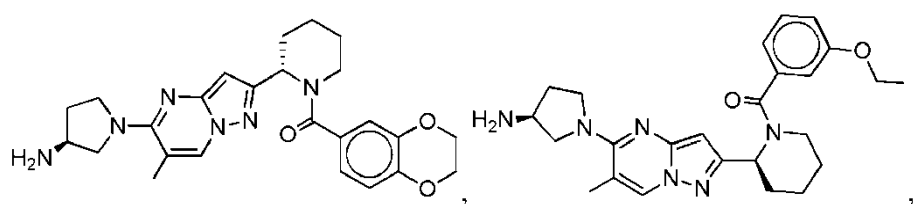
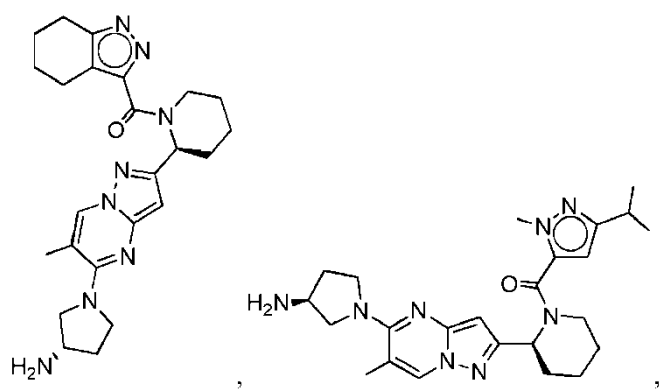
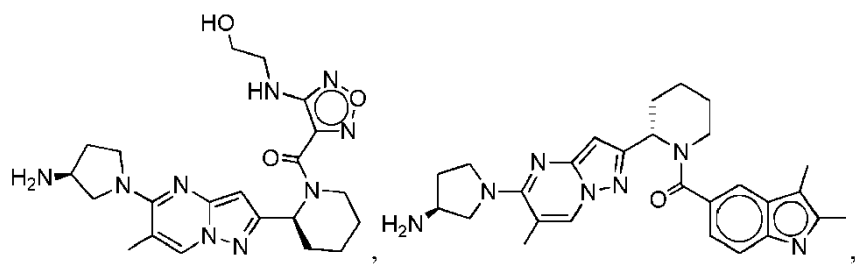
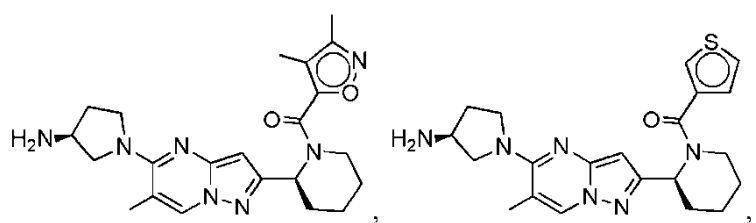
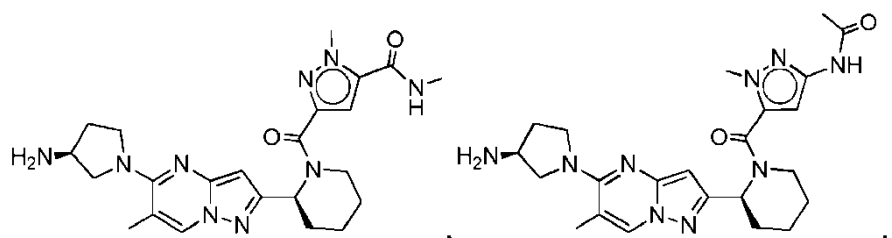
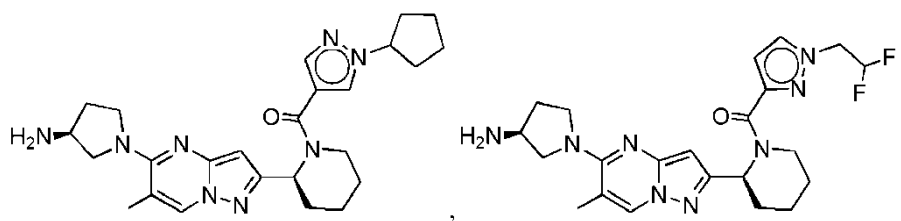


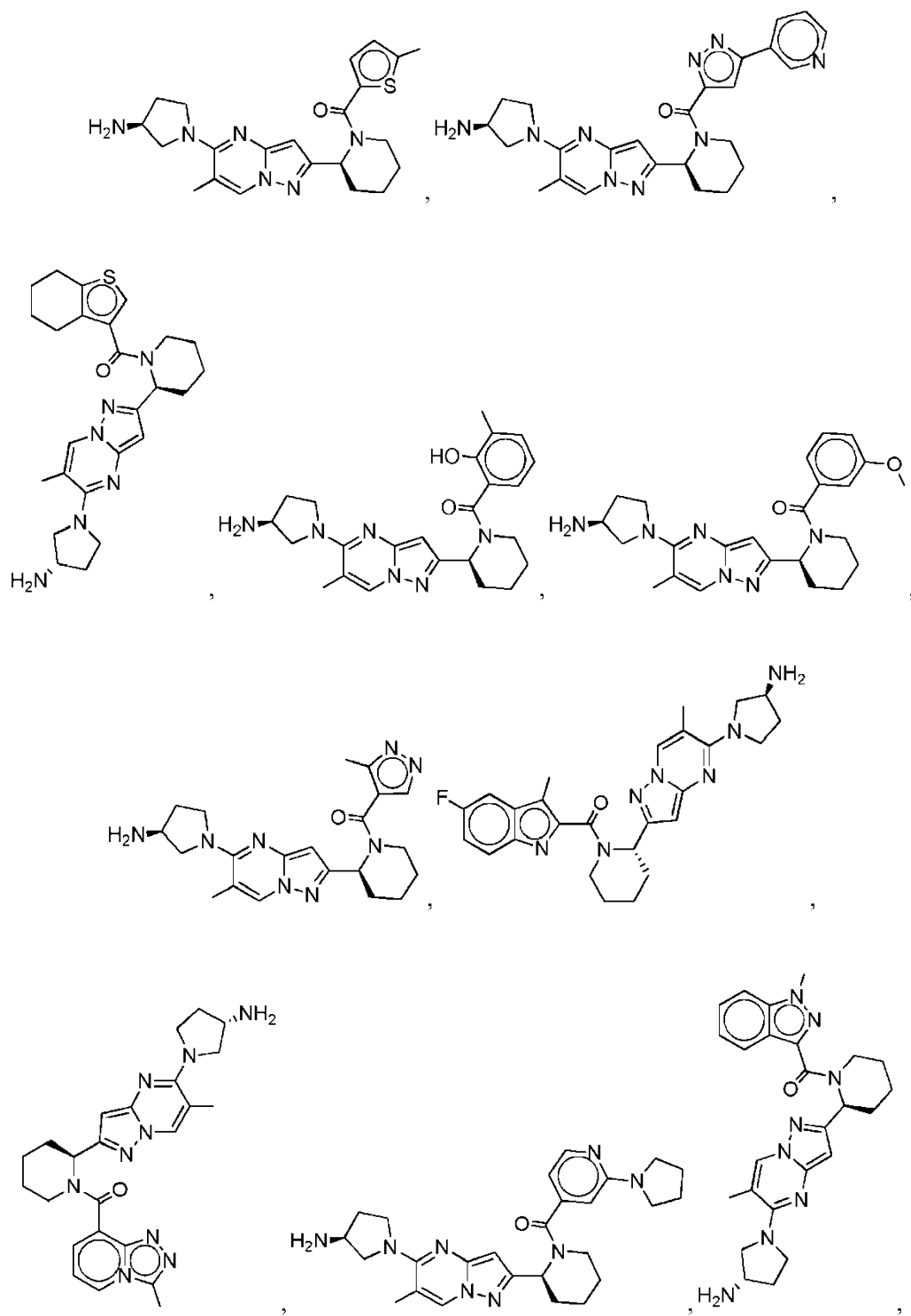


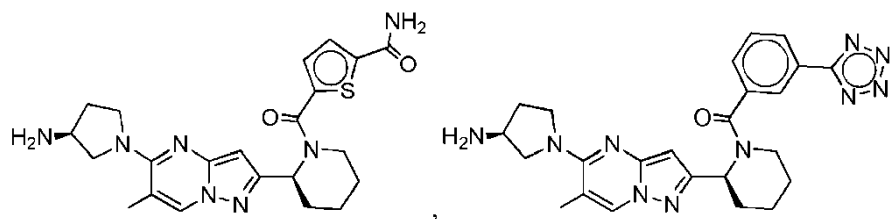
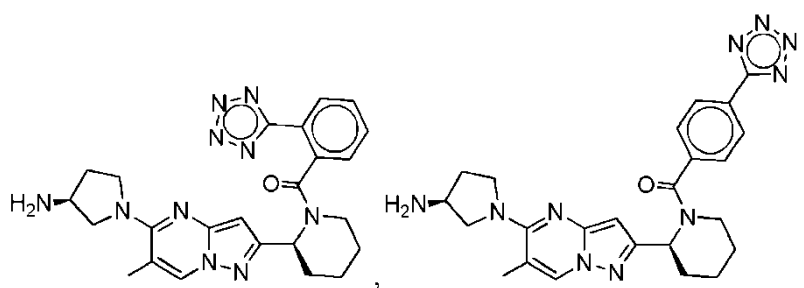
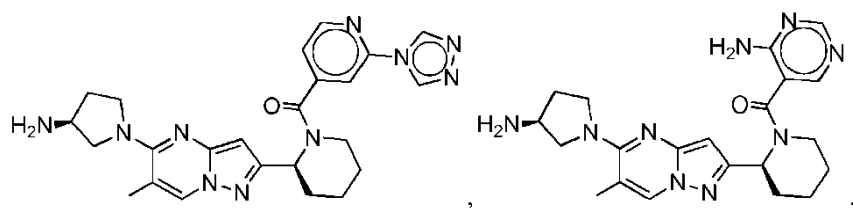
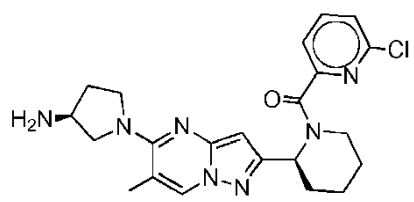
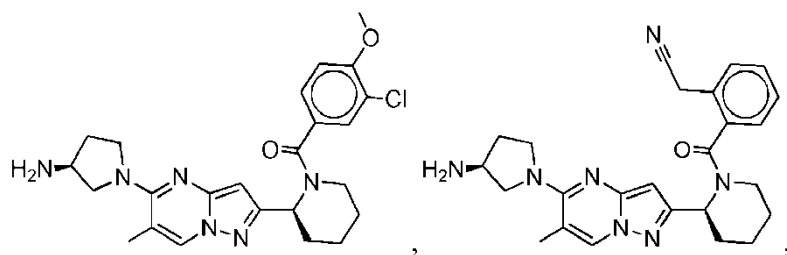
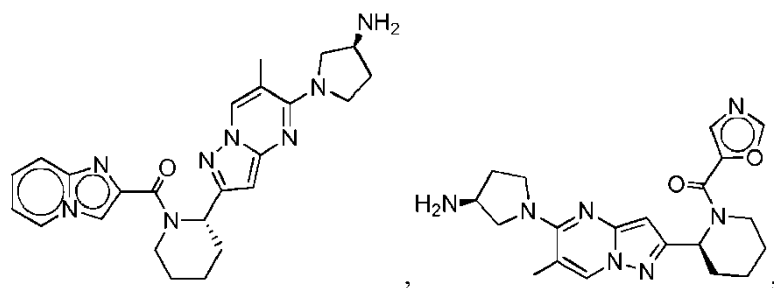


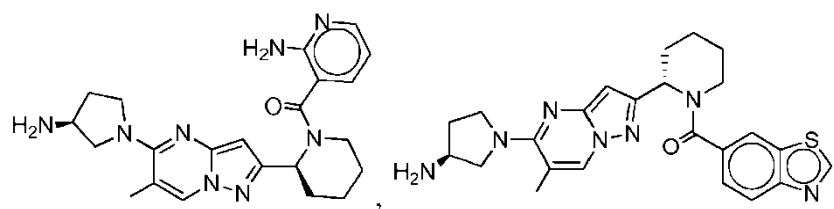
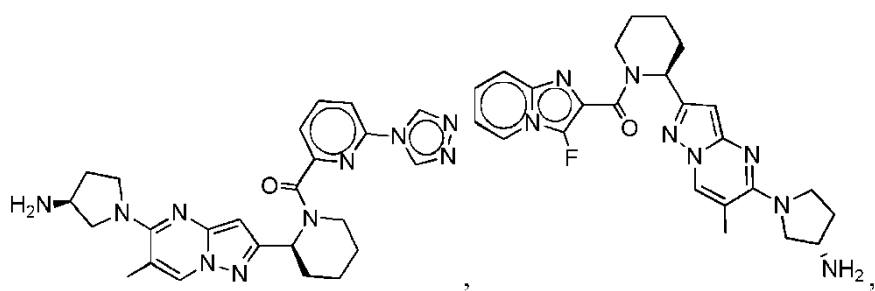
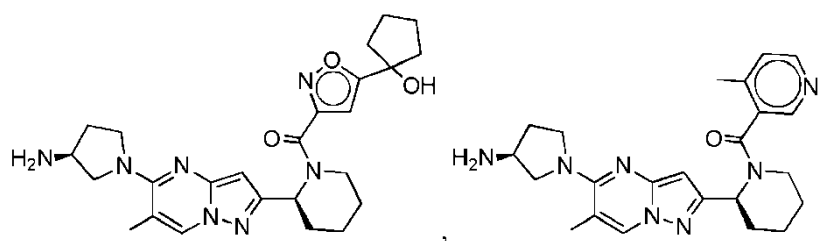
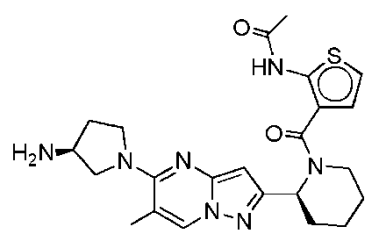
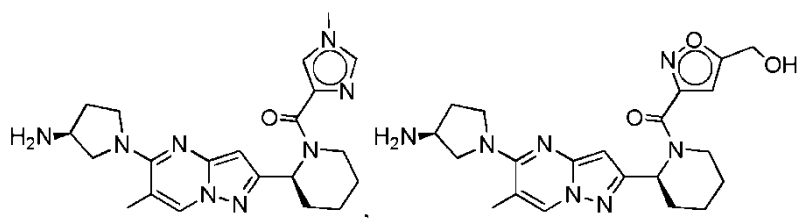
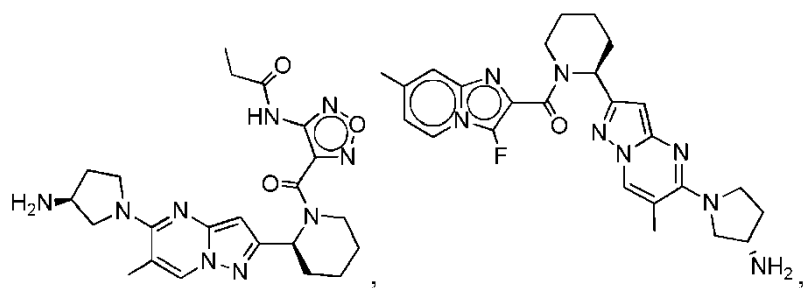


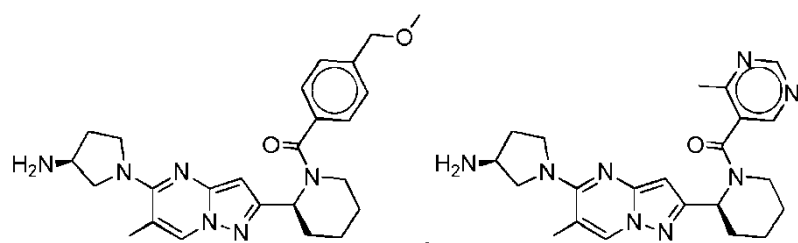
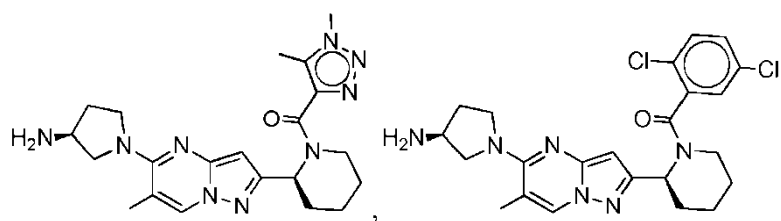
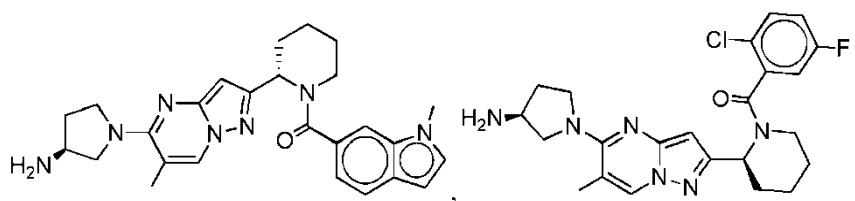
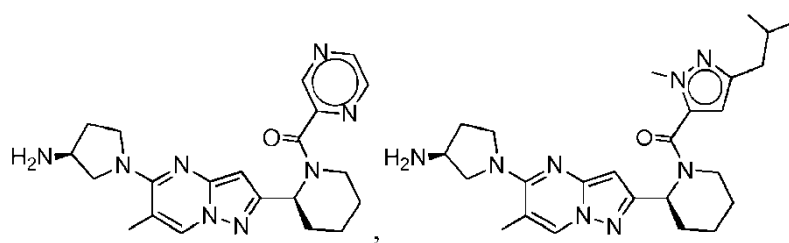
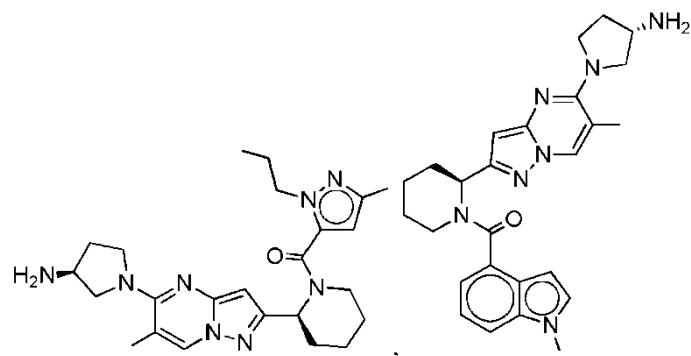
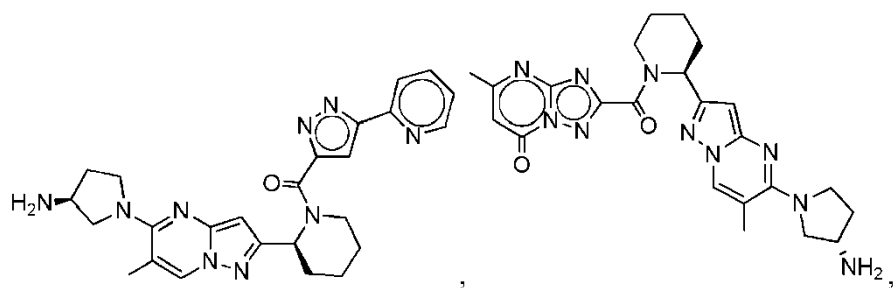
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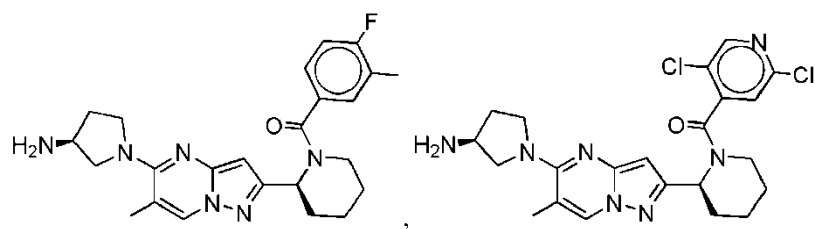
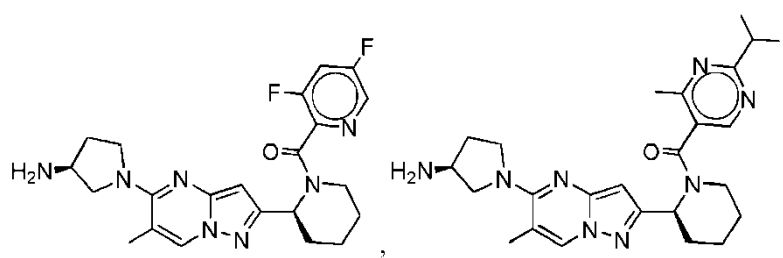
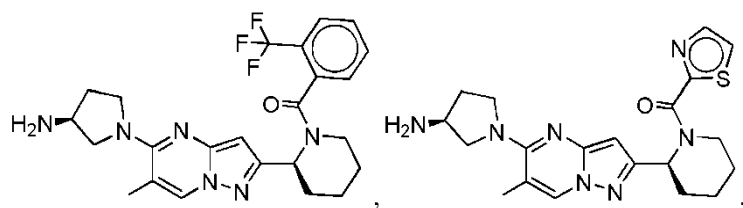
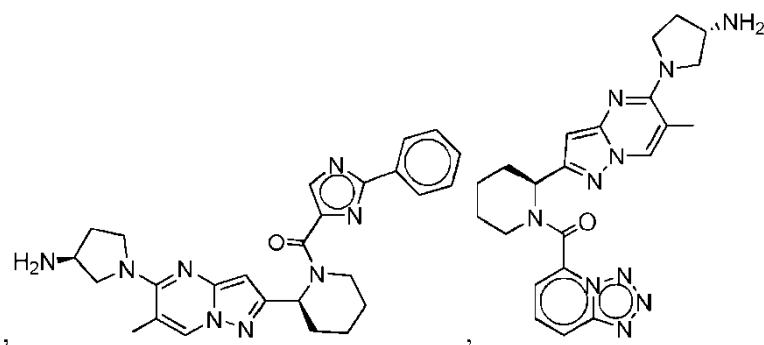
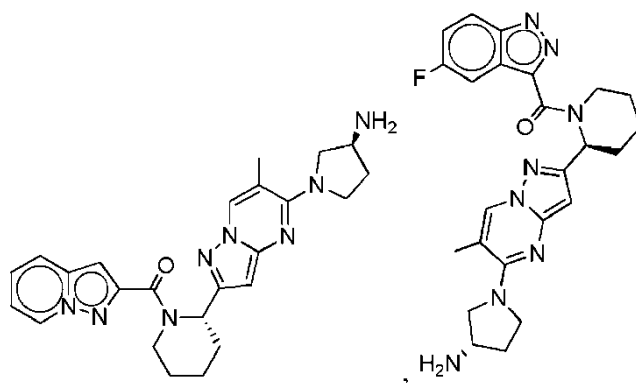


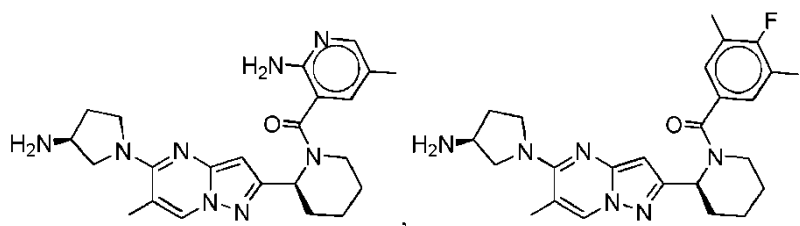






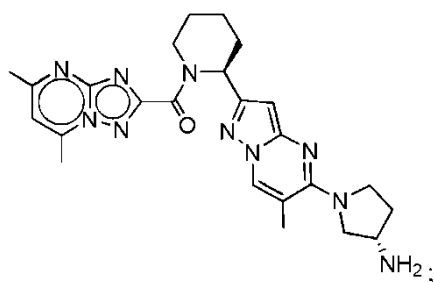






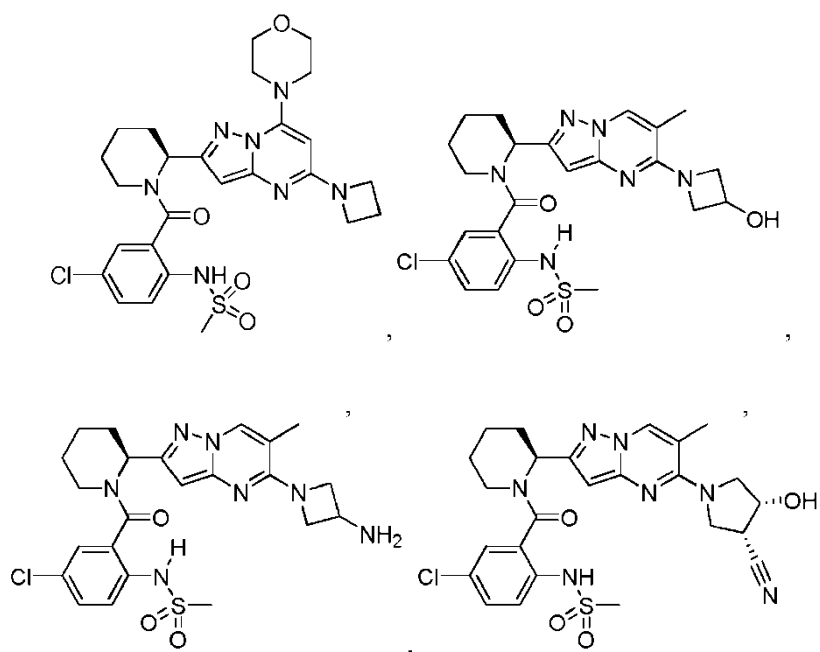
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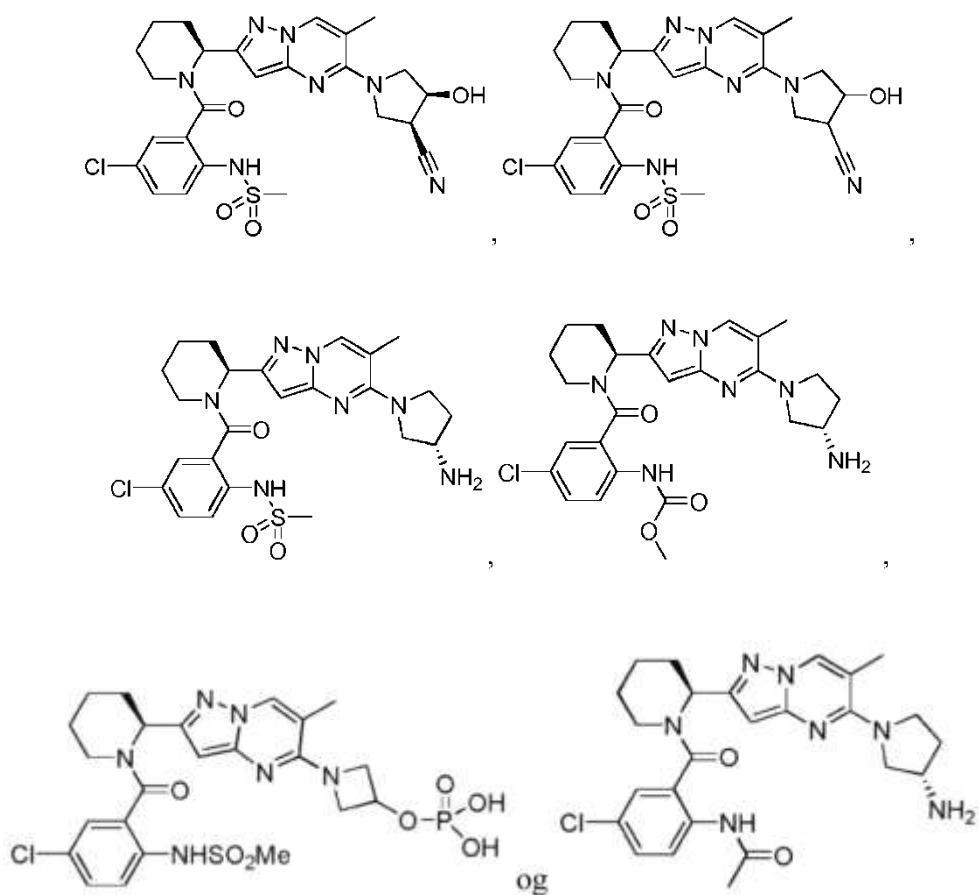


og farmasøytisk akseptable salter og estere derav.

10 **30.** Forbindelse ifølge krav 1, valgt fra gruppen bestående av:



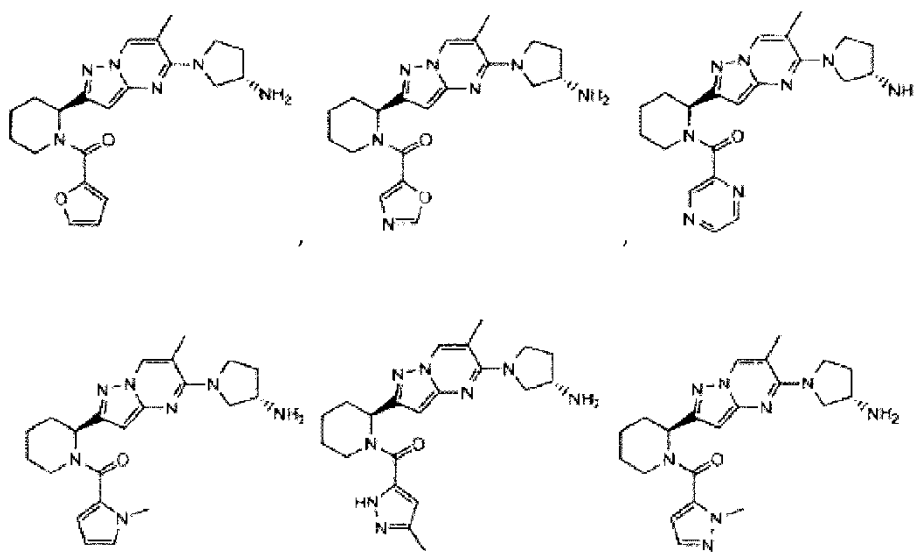
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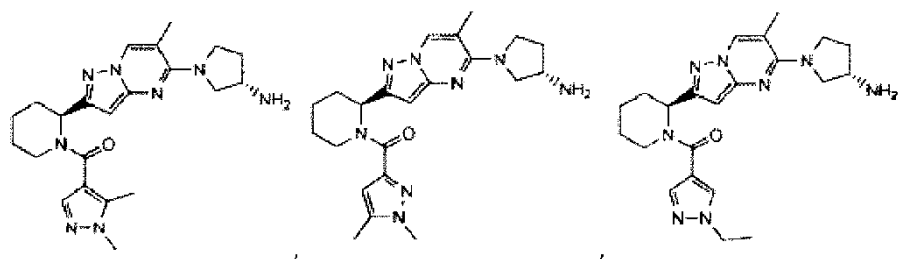
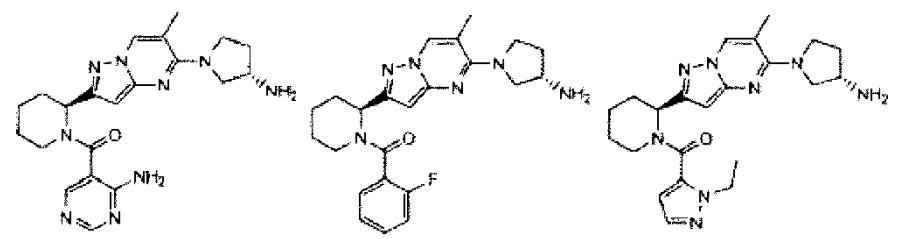
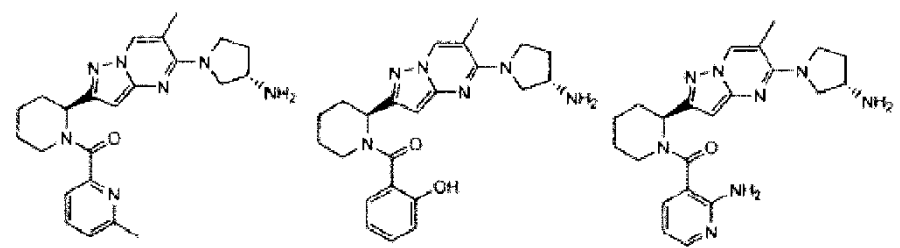
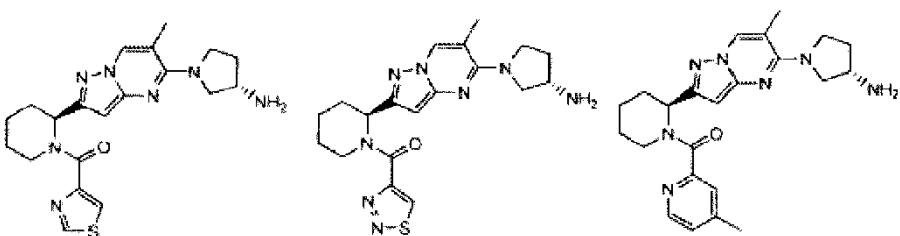
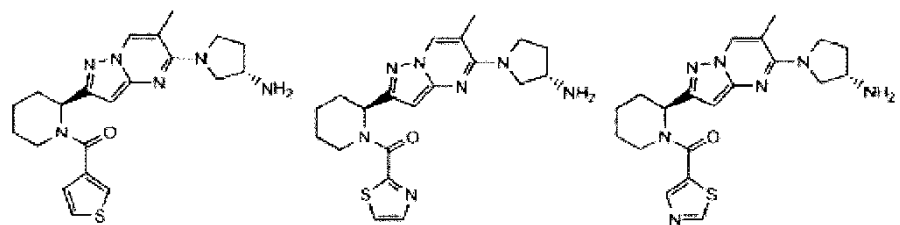
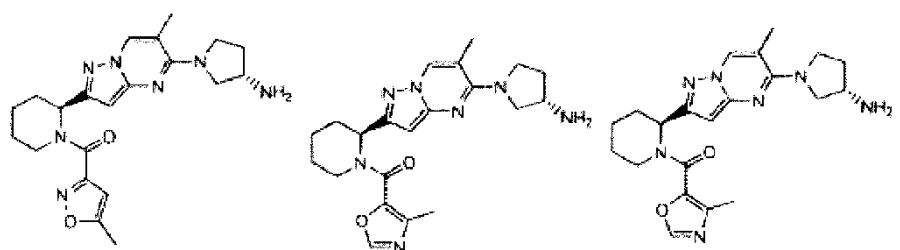


og farmasøytisk akseptable salter og estere derav.

31. Forbindelse ifølge krav 1, som er valgt fra

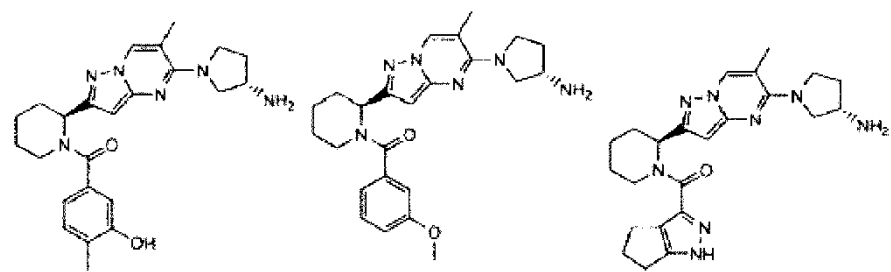
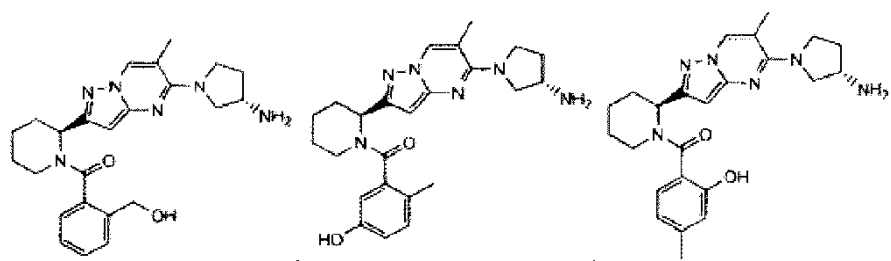
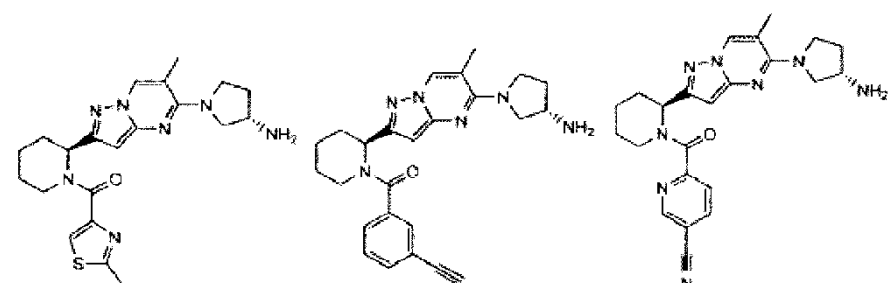
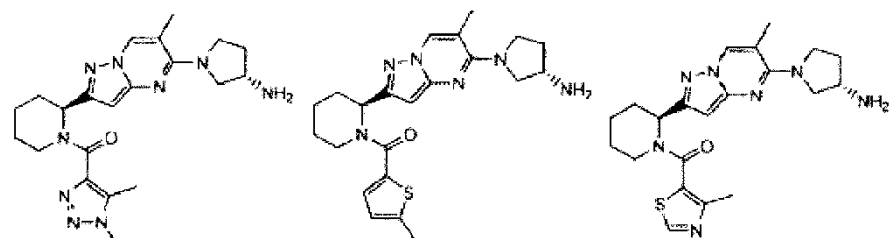
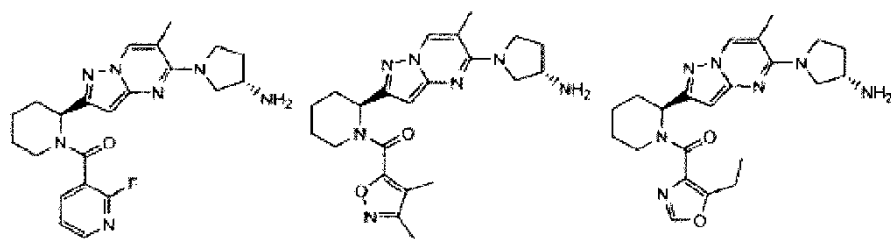
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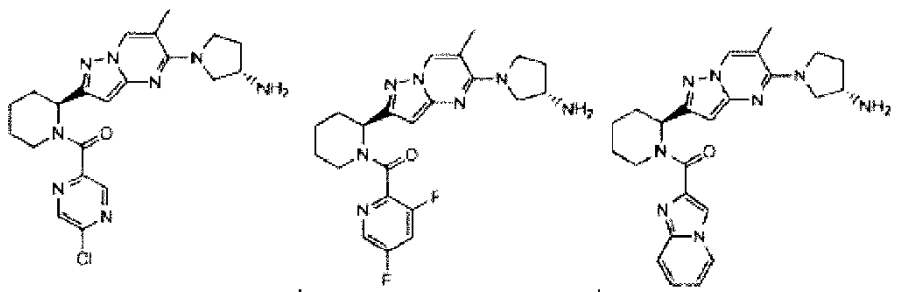
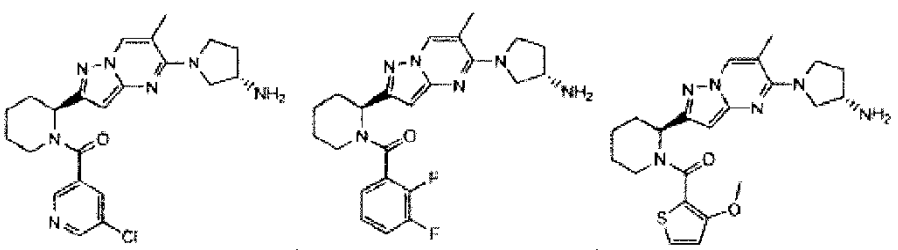
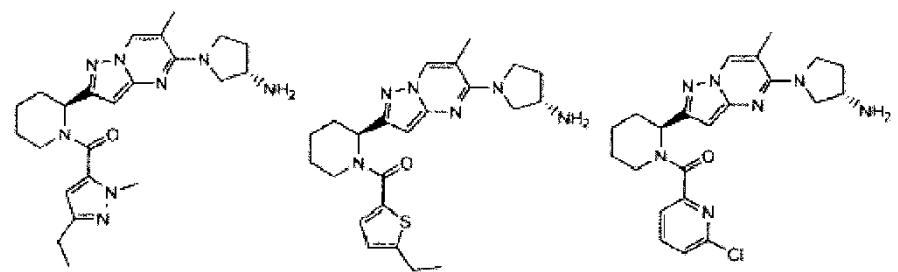
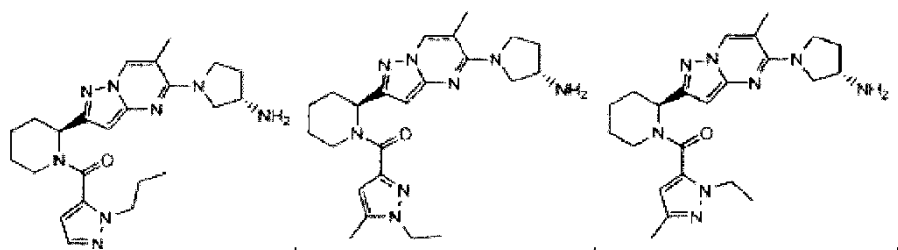
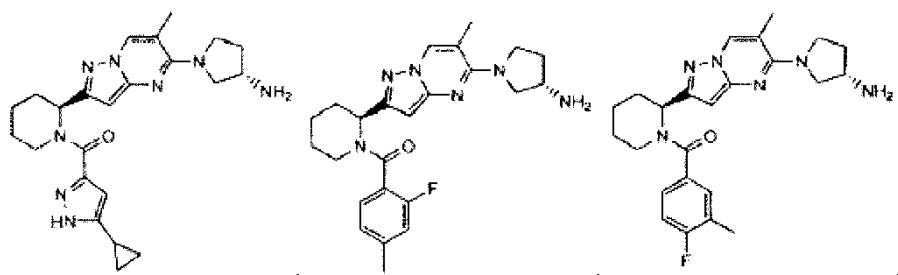




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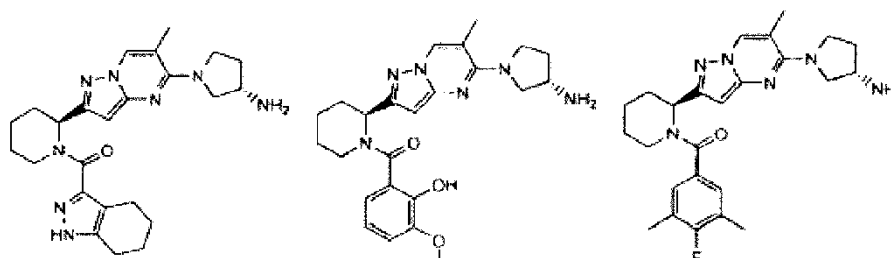
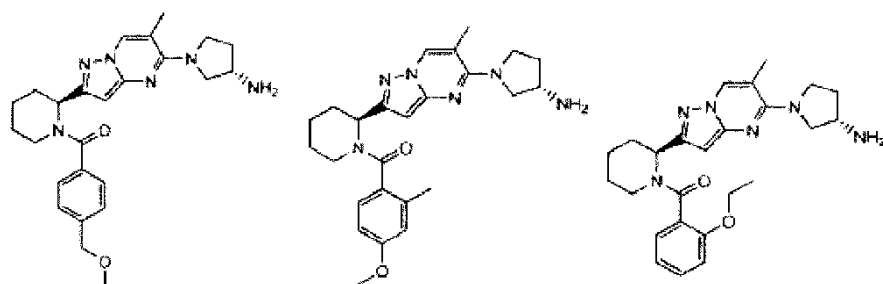
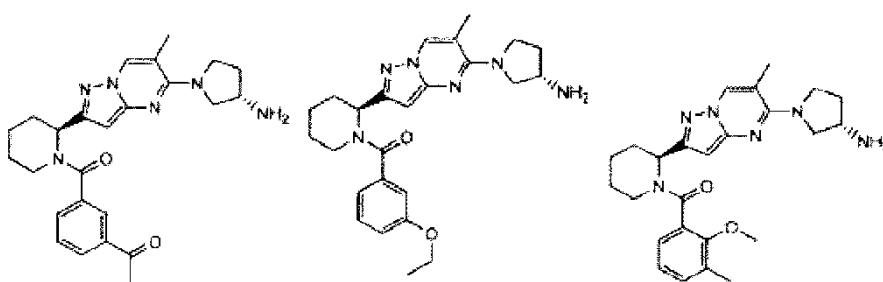
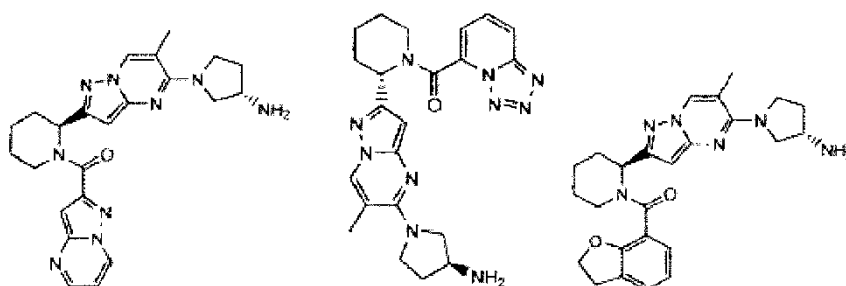
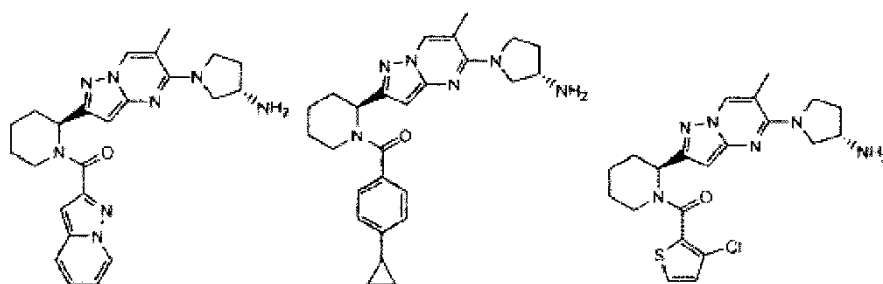
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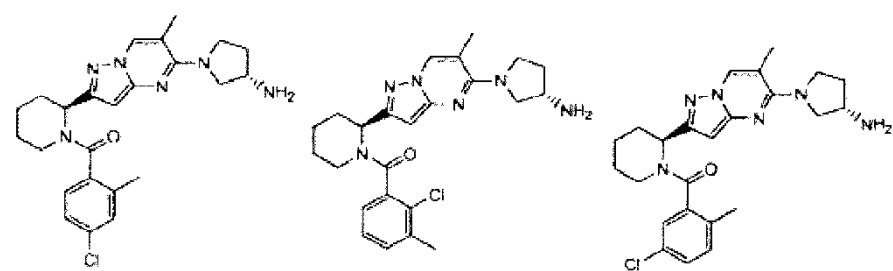
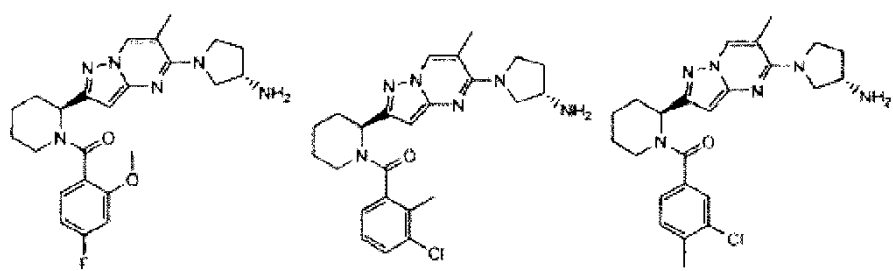
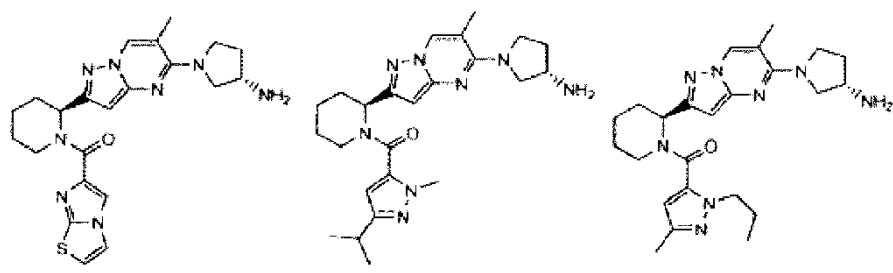
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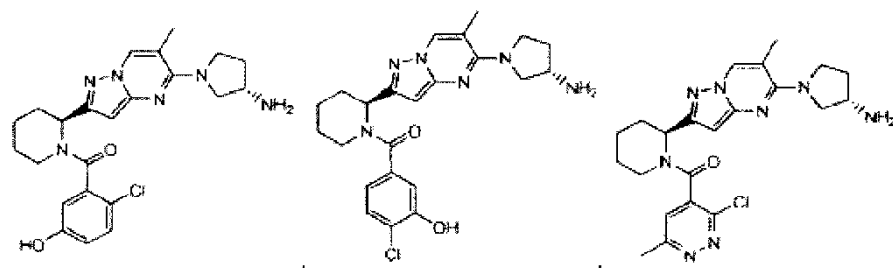
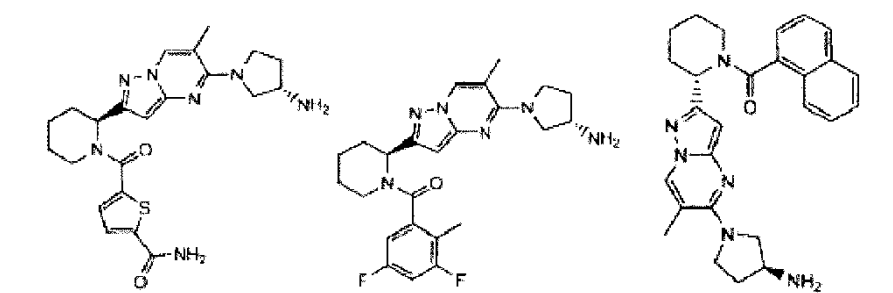


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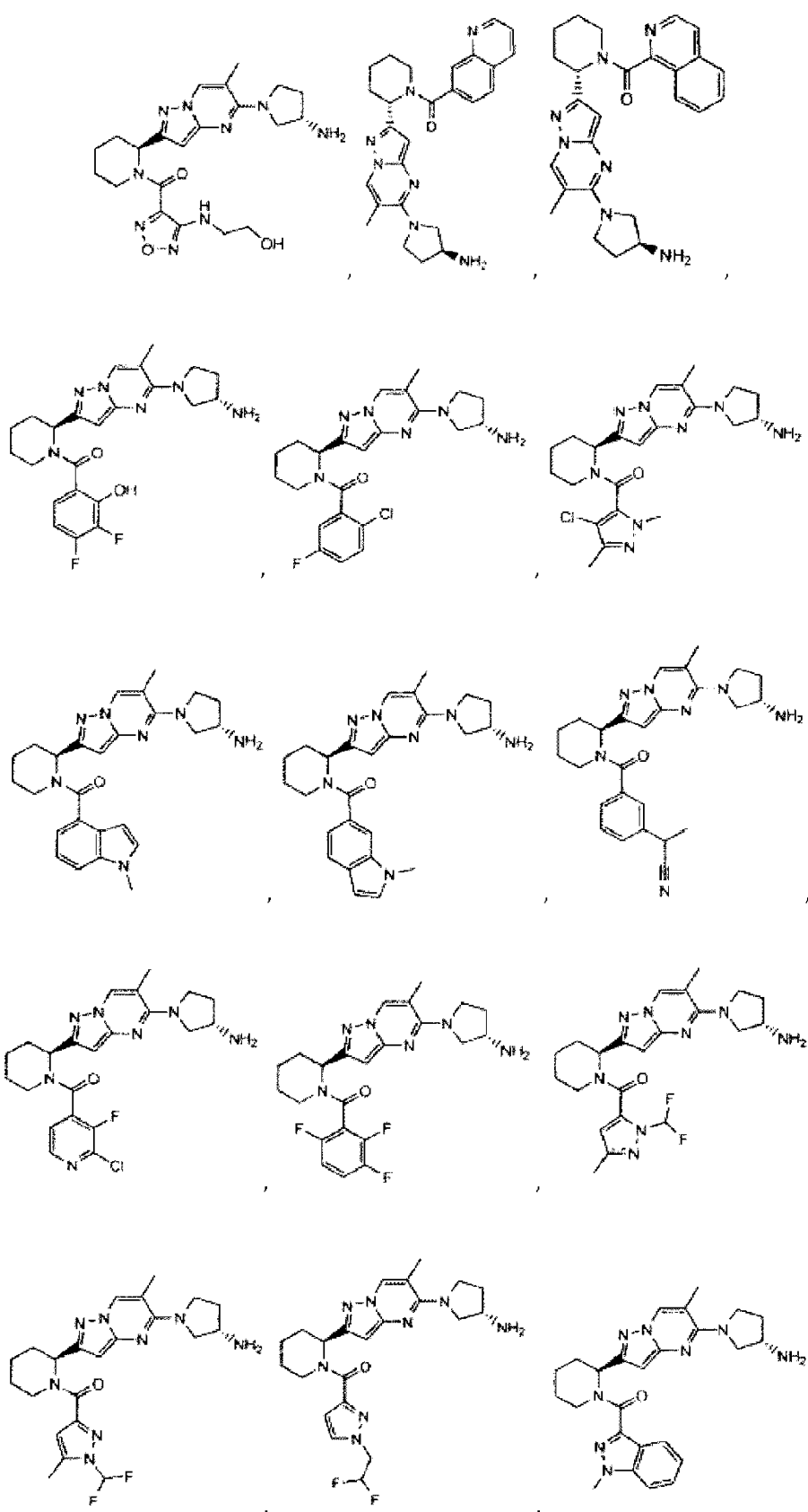
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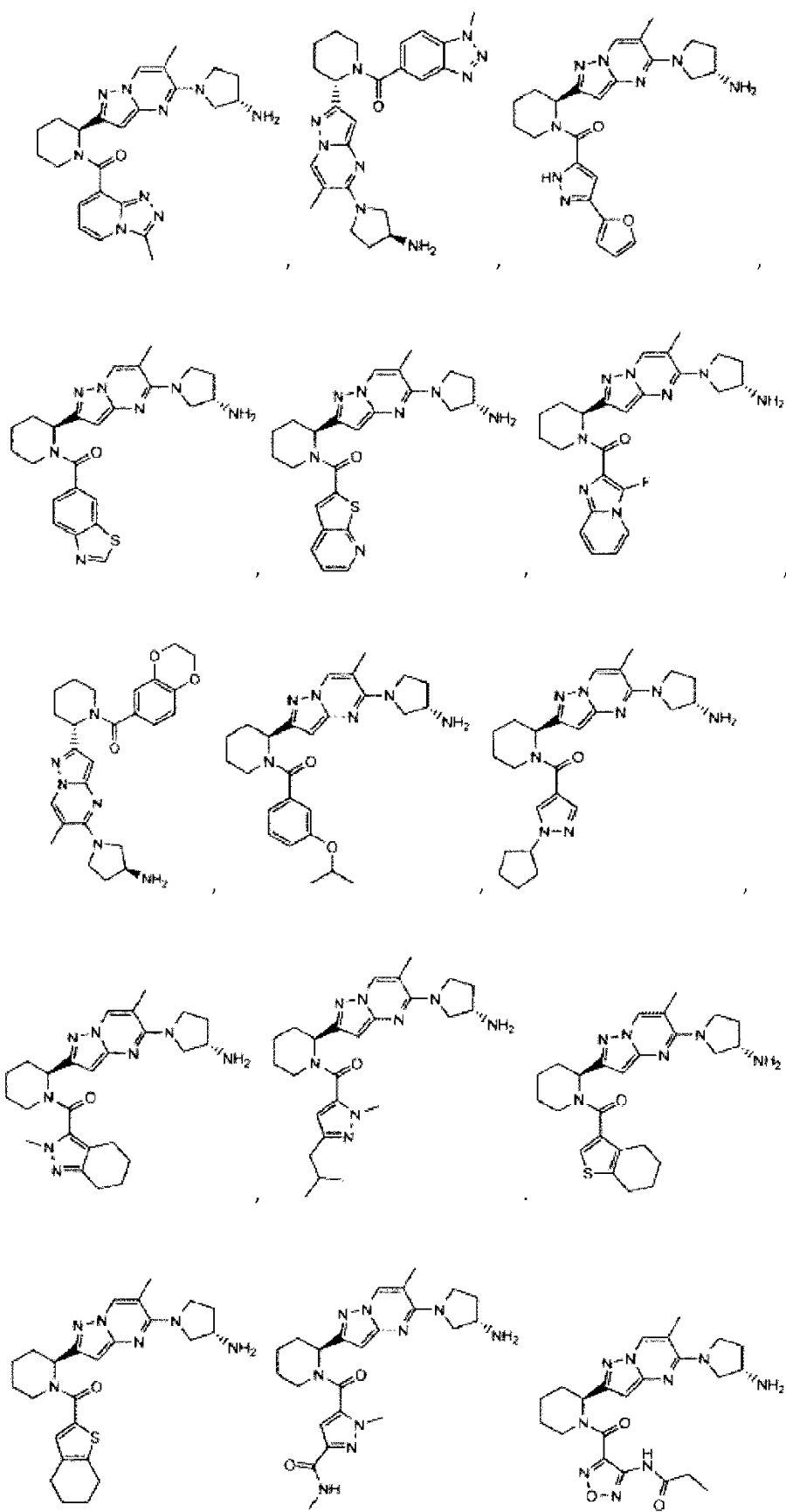


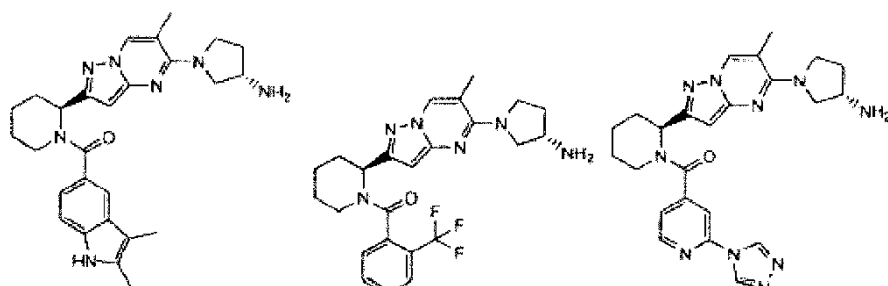
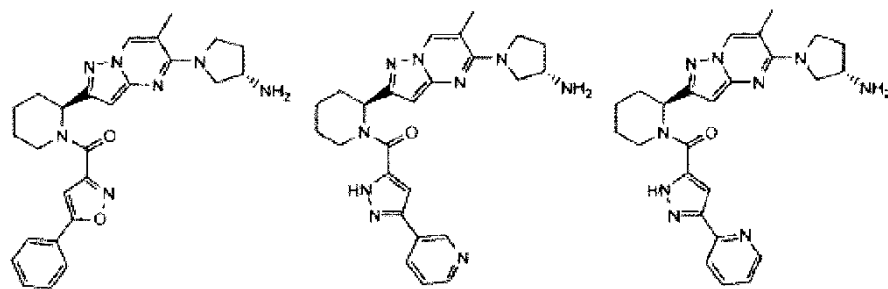
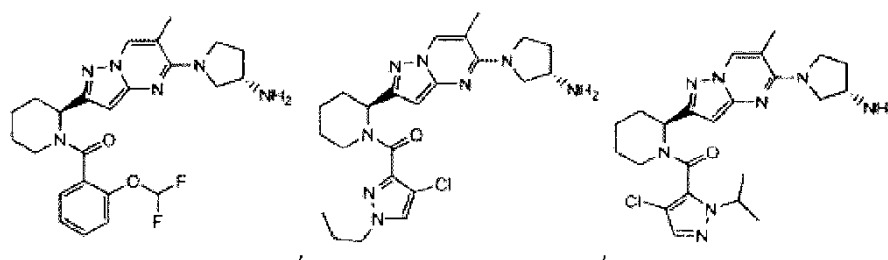
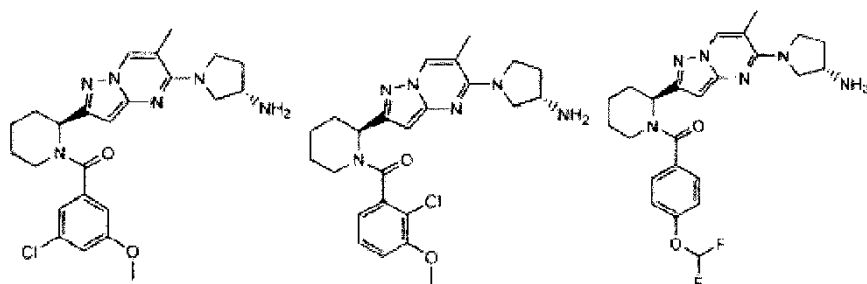
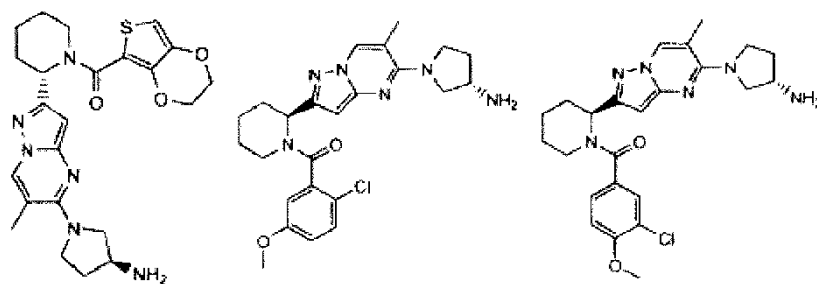
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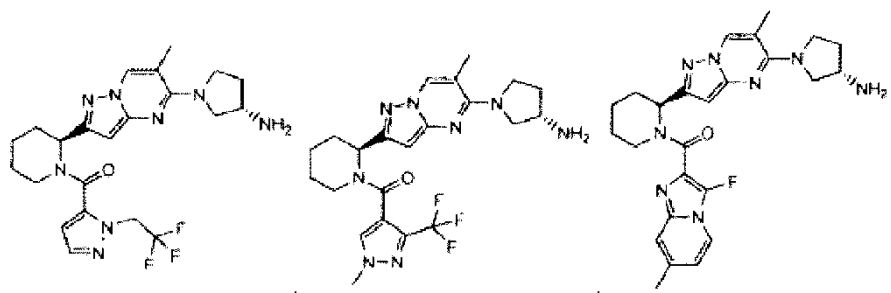
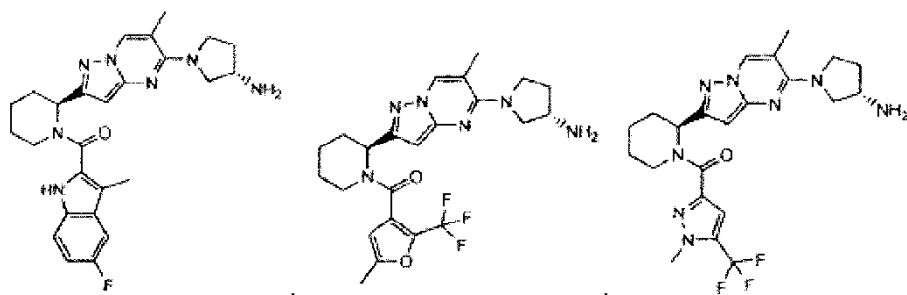
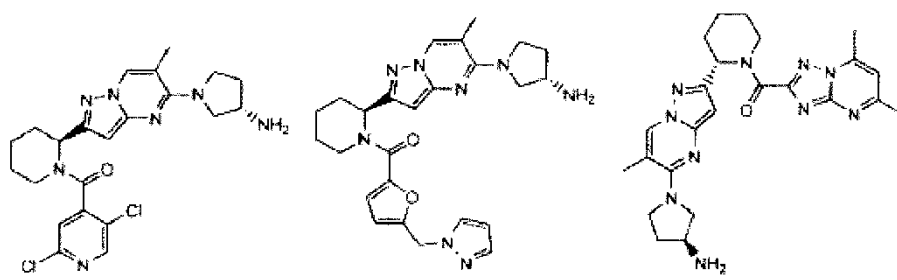
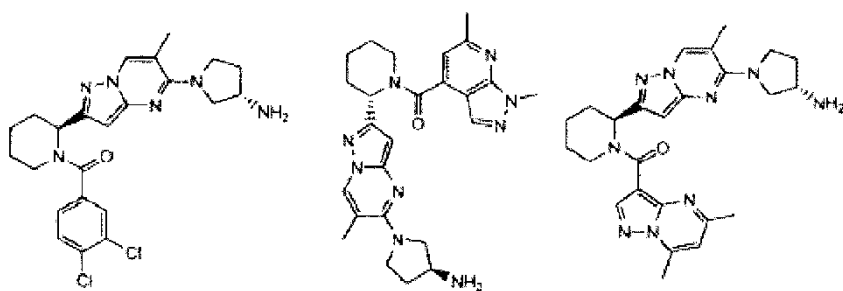
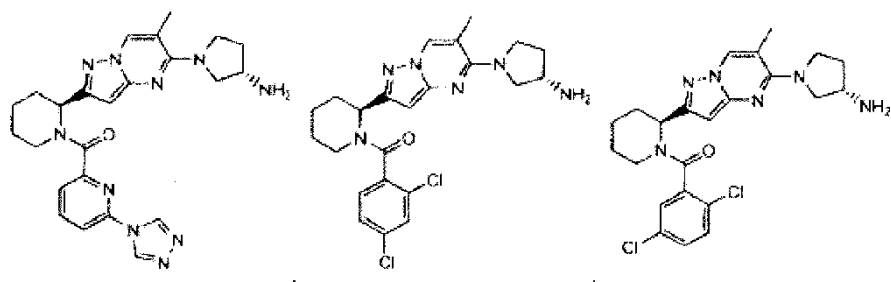


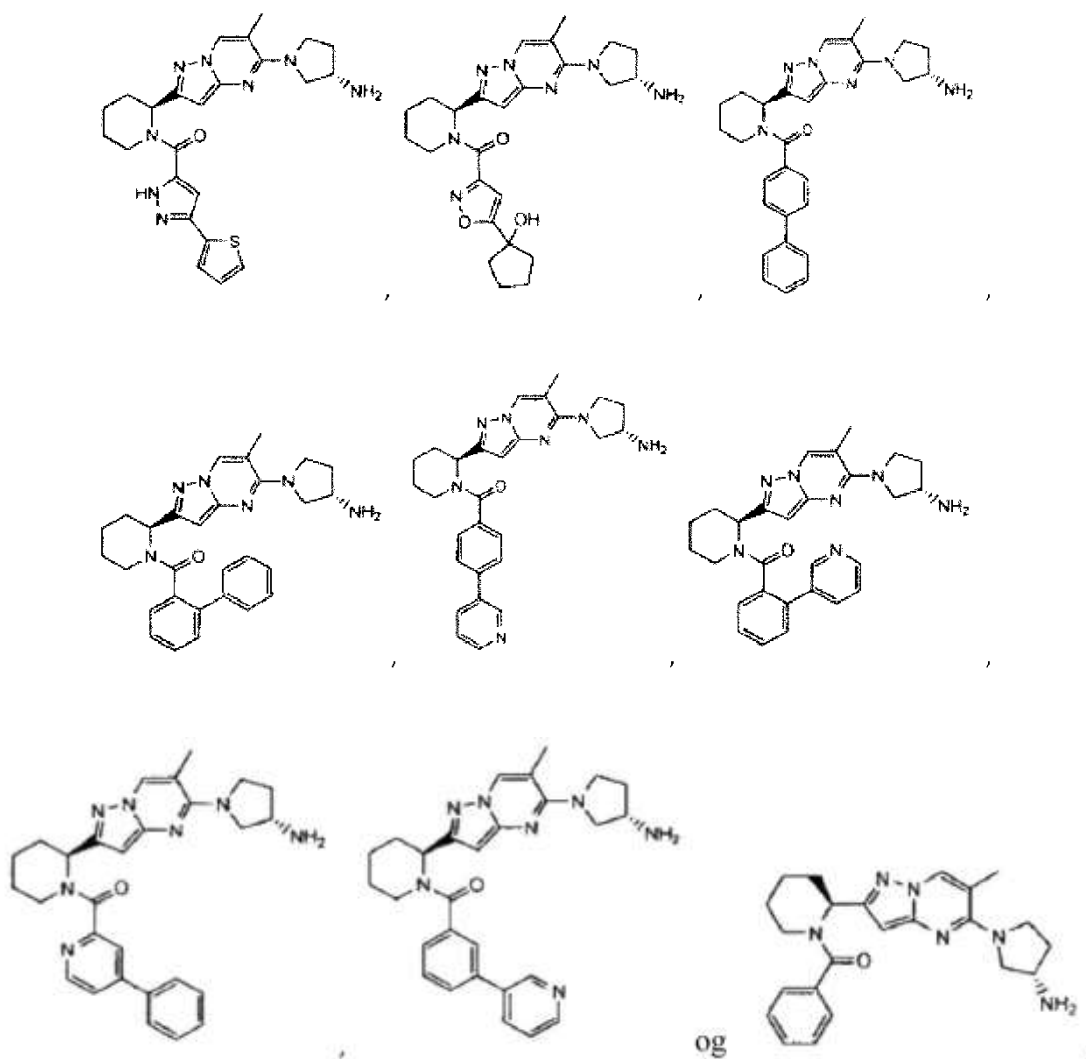
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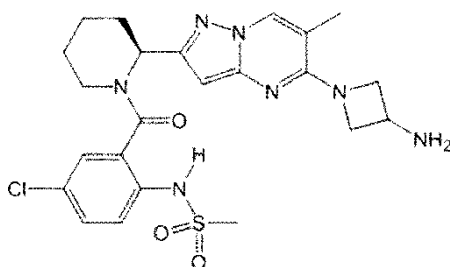




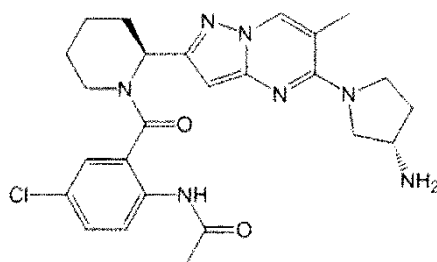


eller et farmasøytisk akseptabelt salt eller ester derav.

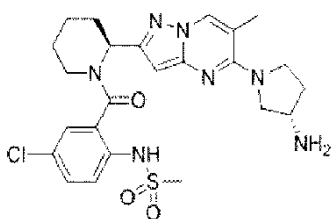
32. Forbindelse ifølge krav 1, eller et farmasøytisk akseptabelt salt eller ester derav, hvor
10 forbindelsen har formelen:



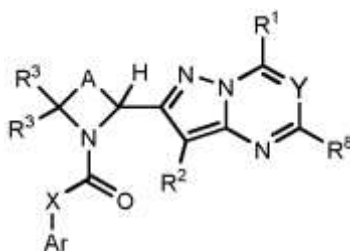
33. Forbindelse ifølge krav 1, eller et farmasøytisk akseptabelt salt eller ester derav, hvor
15 forbindelsen har formelen:



34. Forbindelse ifølge krav 1, eller et farmasøytisk akseptabelt salt eller ester derav, hvor
5 forbindelsen har formelen:



35. Farmasøytisk sammensetning omfattende en forbindelse med formel IX:
10



Formel IX

eller et farmasøytisk akseptabelt salt eller ester derav og en farmasøytisk akseptabel bærer.
hvor:

- 15 A er $-(C(R^4)_2)_n-$ hvor hvilke som helst $C(R^4)_2$ av nevnte $-(C(R^4)_2)_n-$ kan eventuelt erstattes med $-O-$, $-S-$, $S(O)_p-$, NH eller NR^a ;
n er 3, 4, 5 eller 6;
hver p er 1 eller 2;
20 Ar er en C_2 - C_{20} heterocyklylgruppe eller en C_6 - C_{20} arylgruppe, hvor C_2 - C_{20} heterocyklylgruppen eller C_6 - C_{20} arylgruppen eventuelt er substituert med 1 til 5 R^6 ;
X er $-(CR^{13}R^{14})-$, $-N(CH_2R^{14})-$ eller X er fraværende;

Y er N eller CR⁷;

hver R¹, R², R³, R⁴, R⁵, R⁶, R⁷ eller R⁸ er uavhengig H, okso, OR¹¹, NR¹¹R¹², NR¹¹C(O)R¹¹, NR¹¹C(O)OR¹¹, NR¹¹C(O)NR¹¹R¹², N₃, CN, NO₂, SR¹¹, S(O)_pR^a, NR¹¹S(O)_pR^a, -C(=O)R¹¹, -C(=O)OR¹¹, -C(=O)NR¹¹R¹², -C(=O)SR¹¹, -S(O)_p(OR¹¹),
 5 -SO₂NR¹¹R¹², -NR¹¹S(O)_p(OR¹¹), -NR¹¹SO_pNR¹¹R¹², NR¹¹C(=NR¹¹)NR¹¹R¹², halogen, (C₁-C₈)alkyl, (C₂-C₈)alkenyl, (C₂-C₈)alkynyl, aryl(C₁-C₈)alkyl, C₆-C₂₀ aryl, C₂-C₂₀heterocyklyl, (C₃-C₇)cykloalkyl eller (C₄-C₈)karbocyklylalkyl;

to R⁴ på tilstøtende karbonatomer, når tatt sammen, kan danne en dobbelbinding mellom de to karboner som de er bundet til eller kan danne en (C₃-C₇)cykloalkylring
 10 hvor ett karbonatom av nevnte (C₃-C₇)cykloalkylring kan eventuelt erstattes med -O-, -S-, -S(O)_p-, -NH- eller -NR^a;

fire R⁴ på tilstøtende karbonatomer, når tatt sammen, kan danne en eventuelt substituert C₆arylring;

to R⁴ på samme karbonatom, når tatt sammen, kan danne en (C₃-C₇)cykloalkylring
 15 hvor ett karbonatom av nevnte (C₃-C₇)cykloalkylring eventuelt kan erstattes med -O-, -S-, -S(O)_p-, -NH- eller -NR^a;

to R⁶ på tilstøtende karbonatomer, når tatt sammen, kan danne en (C₃-C₇)cykloalkylring hvor ett karbonatom av nevnte (C₃-C₇)cykloalkylring kan eventuelt erstattes med -O-, -S-, -S(O)_p-, -NH- eller -NR^a;

20 hvilke som helst R⁶ tilstøtende til den obligate karbonylgruppe av nevnte Ar, når tatt sammen med R³, kan danne en binding eller en -(C(R⁵)₂)_m-gruppe hvor m er 1 eller 2; hvilke som helst R⁶ tilstøtende til den obligate karbonylgruppe av nevnte Ar, når tatt sammen med R², kan danne en binding;

hver R^a er uavhengig (C₁-C₈)alkyl, (C₁-C₈)haloalkyl, (C₂-C₈)alkenyl, (C₂-C₈)alkynyl, aryl(C₁-C₈)alkyl, C₆-C₂₀aryl, C₂-C₂₀heterocyklyl, (C₃-C₇)cykloalkyl eller (C₄-C₈)karbocyklylalkyl hvor hvilke som helst (C₁-C₈)alkyl, (C₁-C₈)haloalkyl, (C₂-C₈)alkenyl eller (C₂-C₈)alkynyl av R^a er eventuelt substituert med en eller flere OH, NH₂, CO₂H, C₂-C₂₀heterocyklyl, og hvor hvilke som helst aryl(C₁-C₈)alkyl, C₆-C₂₀ aryl, C₂-C₂₀heterocyklyl, (C₃-C₇)cykloalkyl eller (C₄-C₈)karbocyklylalkyl av R^a er eventuelt

30 substituert med en eller flere OH, NH₂, CO₂H, C₂-C₂₀ heterocyklyl eller (C₁-C₈)alkyl; hver R¹¹ eller R¹² er uavhengig H, (C₁-C₈)alkyl, (C₂-C₈)alkenyl, (C₂-C₈)alkynyl, aryl(C₁-C₈)alkyl, C₆-C₂₀aryl, C₂-C₂₀heterocyklyl, (C₃-C₇)cykloalkyl, (C₄-C₈)karbocyklylalkyl, -C(=O)R^a, -S(O)_pR^a, eller aryl(C₁-C₈)alkyl; eller R¹¹ og R¹² tatt sammen med et nitrogen til hvilket de begge er bundet danner en 3- til 7-leddet hereocyklik ring hvor
 35 hvilket som helst karbonatom av nevnte hereocykliske ring eventuelt kan være erstattet med -O-, -S-, -S(O)_p-, -NH-, -NR^a- eller -C(O)-;

R¹³ er H eller (C₁-C₈)alkyl;

R^{14} er H, (C_1-C_8) alkyl, $NR^{11}R^{12}$, $NR^{11}C(O)R^{11}$, $NR^{11}C(O)OR^{11}$, $NR^{11}C(O)NR^{11}R^{12}$,
 $NR^{11}S(O)_pR^a$, $-NR^{11}S(O)_p(OR^{11})$ eller $NR^{11}SO_pNR^{11}R^{12}$; og
 hvor hver (C_1-C_8) alkyl, (C_2-C_8) alkenyl, (C_2-C_8) alkynyl, aryl (C_1-C_8) alkyl, C_6-C_{20} aryl,
 C_{20} heterocyklyl, (C_3-C_7) cykloalkyl eller (C_4-C_8) karbocyklylalkyl av hver R^1 , R^2 , R^3 ,
 R^4 , R^5 , R^6 , R^7 , R^8 , R^{11} or R^{12} er, uavhengig, eventuelt substituert med en eller flere
 okso, halogen, hydroksy, NH_2 , CN , N_3 , $N(R^a)_2$, NHR^a , SH , SR^a , $S(O)_pR^a$, OR^a ,
 (C_1-C_8) alkyl, (C_1-C_8) haloalkyl, $-C(O)R^a$, $-C(O)H$, $-C(=O)OR^a$, $-C(=O)OH$,
 $-C(=O)N(R^a)_2$, $-C(=O)NHR^a$, $-C(=O)NH_2$, $NHS(O)_pR^a$, $NR^aS(O)_pR^a$, $NHC(O)R^a$,
 $NR^aC(O)R^a$, $NHC(O)OR^a$, $NR^aC(O)OR^a$, $NR^aC(O)NHR^a$, $NR^aC(O)N(R^a)_2$,
 $NR^aC(O)NH_2$, $NHC(O)NHR^a$, $NHC(O)N(R^a)_2$, $NHC(O)NH_2$, $=NH$, $=NOH$, $=NOR^a$,
 $NR^aS(O)_pNHR^a$, $NR^aS(O)_pN(R^a)_2$, $NR^aS(O)_pNH_2$, $NHS(O)_pNHR^a$, $NHS(O)_pN(R^a)_2$,
 $NHS(O)_pNH_2$, $-OC(=O)R^a$, $-OP(O)(OH)_2$ eller R^a .

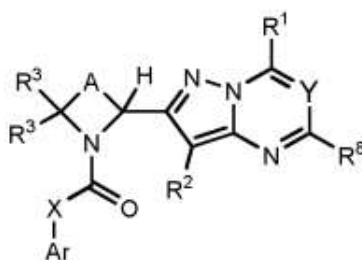
36. Farmasøytisk sammensetning omfattende en terapeutisk effektiv mengde av en

forbindelse ifølge hvilke som helst av kravene 1-34, eller et farmasøytisk akseptabelt salt eller ester derav og en farmasøytisk akseptabel bærer.

37. Farmasøytisk sammensetning ifølge krav 35 eller krav 36, videre omfattende minst ett andre terapeutiske middel valgt fra ribavirin, palivizumab, motavizumab, RSV-IGIV MEDI-

557, A-60444, MDT-637, BMS-433771, ALN-RSV0 eller ALX-0171 blandinger derav.

38. Forbindelse med formel IX:



Formel IX

eller et farmasøytisk akseptabelt salt eller ester derav, eller sammensetning derav for
 anvendelse i terapeutisk eller profylaktisk behandling av en *Pneumovirinae* virusinfeksjon
 eller en respiratorisk syncytial virusinfeksjon;

hvor:

A er $-(C(R^4)_2)_n-$ hvor hvilke som helst $C(R^4)_2$ av nevnte $-(C(R^4)_2)_n-$ kan eventuelt erstattes med $-O-$, $-S-$, $S(O)_p-$, NH eller NR^a ;

n er 3, 4, 5 eller 6;

hver p er 1 eller 2;

5 Ar er en C_2-C_{20} heterocyklylgruppe eller en C_6-C_{20} arylgruppe, hvor C_2-C_{20} heterocyklylgruppen eller C_6-C_{20} arylgruppen eventuelt er substituert med 1 til 5 R^6 ;

X er $-(CR^{13}R^{14})-$, $-N(CH_2R^{14})-$ eller X er fraværende;

Y er N eller CR^7 ;

hver R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^7 eller R^8 er uavhengig H, okso, OR^{11} , $NR^{11}R^{12}$,

10 $NR^{11}C(O)R^{11}$, $NR^{11}C(O)OR^{11}$, $NR^{11}C(O)NR^{11}R^{12}$, N_3 , CN , NO_2 , SR^{11} , $S(O)_pR^a$,

$NR^{11}S(O)_pR^a$, $-C(=O)R^{11}$, $-C(=O)OR^{11}$, $-C(=O)NR^{11}R^{12}$, $-C(=O)SR^{11}$, $-S(O)_p(OR^{11})$,

$-SO_2NR^{11}R^{12}$, $-NR^{11}S(O)_p(OR^{11})$, $-NR^{11}SO_pNR^{11}R^{12}$, $NR^{11}C(=NR^{11})NR^{11}R^{12}$ halogen,

(C_1-C_8) alkyl, (C_2-C_8) alkenyl, (C_2-C_8) alkynyl, aryl(C_1-C_8)alkyl, C_6-C_{20} aryl, C_2-C_{20} heterocyklyl, (C_3-C_7) cykloalkyl eller (C_4-C_8) karbocyklylalkyl;

15 to R^4 på tilstøtende karbonatomer, når tatt sammen, kan danne en dobbelbinding mellom de to karboner som de er bundet til eller kan danne en (C_3-C_7) cykloalkylring hvor ett karbonatom av nevnte (C_3-C_7) cykloalkylring eventuelt kan erstattes med $-O-$, $-S-$, $-S(O)_p-$, $-NH-$ eller $-NR^a-$;

fire R^4 på tilstøtende karbonatomer, når tatt sammen, kan danne en eventuelt

20 substituert C_6 arylring;

to R^4 på samme karbonatom, når tatt sammen, kan danne en (C_3-C_7) cykloalkylring hvor ett karbonatom av nevnte (C_3-C_7) cykloalkylring eventuelt kan erstattes med $-O-$, $-S-$, $-S(O)_p-$, $-NH-$ eller $-NR^a-$;

25 to R^6 på tilstøtende karbonatomer, når tatt sammen, kan danne en (C_3-C_7) cykloalkylring hvor ett karbonatom av nevnte (C_3-C_7) cykloalkylring eventuelt kan erstattes med $-O-$, $-S-$, $-S(O)_p-$, $-NH-$ eller $-NR^a-$;

hvilke som helst R^6 tilstøtende til den obligate karbonylgruppe av nevnte Ar, når tatt sammen med R^3 , kan danne en binding eller en $-(C(R^5)_2)_m-$ gruppe hvor m er 1 eller 2;

30 hvilke som helst R^6 tilstøtende til den obligate karbonylgruppe av nevnte Ar, når tatt sammen med R^2 , kan danne en binding;

hver R^a er uavhengig (C_1-C_8) alkyl, (C_1-C_8) haloalkyl, (C_2-C_8) alkenyl, (C_2-C_8) alkynyl, aryl(C_1-C_8)alkyl, C_6-C_{20} aryl, C_2-C_{20} heterocyklyl, (C_3-C_7) cykloalkyl eller (C_4-C_8) karbocyklylalkyl hvor hvilke som helst (C_1-C_8) alkyl, (C_1-C_8) haloalkyl, (C_2-C_8) alkenyl eller (C_2-C_8) alkynyl av R^a er eventuelt substituert med en eller flere OH, NH_2 , CO_2H ,

35 C_2-C_{20} heterocyklyl, og hvor hvilke som helst aryl(C_1-C_8)alkyl, C_6-C_{20} aryl,

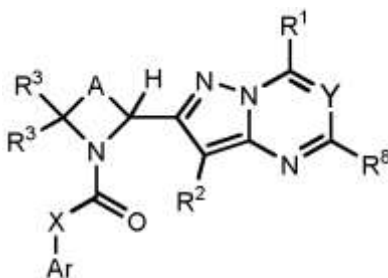
C_2-C_{20} heterocyklyl, (C_3-C_7) cykloalkyl eller (C_4-C_8) karbocyklylalkyl av R^a er eventuelt substituert med en eller flere OH, NH_2 , CO_2H , C_2-C_2 heterocyklyl eller (C_1-C_8) alkyl;

hver R^{11} eller R^{12} er uavhengig H, (C_1-C_8) alkyl, (C_2-C_8) alkenyl, (C_2-C_8) alkynyl, aryl-
 (C_1-C_8) alkyl, C_6-C_{20} aryl, C_2-C_{20} heterocyklyl, (C_3-C_7) cykloalkyl, (C_4-C_8) karbocyklylalkyl,
 $-C(=O)R^a$, $-S(O)_pR^a$ eller aryl (C_1-C_8) alkyl; eller R^{11} og R^{12} tatt sammen med et
nitrogen til hvilket de begge er bundet danner en 3- til 7-leddet hereocykklisk ring hvor
5 hvilket som helst karbonatom av nevnte hereocykliske ring eventuelt kan være
erstattet med - O-, -S-, $-S(O)_p$ -, -NH-, $-NR^a$ - eller $-C(O)-$;
 R^{13} er H eller (C_1-C_8) alkyl;
 R^{14} er H, (C_1-C_8) alkyl, $NR^{11}R^{12}$, $NR^{11}C(O)R^{11}$, $NR^{11}C(O)OR^{11}$, $NR^{11}C(O)NR^{11}R^{12}$,
 $NR^{11}S(O)_pR^a$, $-NR^{11}S(O)_p(OR^{11})$ eller $NR^{11}SO_pNR^{11}R^{12}$; og
10 hvor hver (C_1-C_8) alkyl, (C_2-C_8) alkenyl, (C_2-C_8) alkynyl, aryl (C_1-C_8) alkyl, C_6-C_{20} aryl,
 C_2-C_{20} heterocyklyl, (C_3-C_7) cykloalkyl eller (C_4-C_8) karbocyklylalkyl av hver R^1 , R^2 , R^3 ,
 R^4 , R^5 , R^6 , R^7 , R^8 , R^{11} eller R^{12} er, uavhengig, eventuelt substituert med en eller flere
okso, halogen, hydroksy, NH_2 , CN, N_3 , $N(R^a)_2$, NHR^a , SH, SR^a , $S(O)_pR^a$, OR^a ,
 (C_1-C_8) alkyl, (C_1-C_8) haloalkyl, $-C(O)R^a$, $-C(O)H$, $-C(=O)OR^a$, $-C(=O)OH$, $-C(=O)N(R^a)_2$,
15 $-C(=O)NHR^a$, $-C(=O)NH_2$, $NHS(O)_pR^a$, $NR^aS(O)_pR^a$, $NHC(O)R^a$, $NR^aC(O)R^a$,
 $NHC(O)OR^a$, $NR^aC(O)OR^a$, $NR^aC(O)NHR^a$, $NR^aC(O)N(R^a)_2$, $NR^aC(O)NH_2$,
 $NHC(O)NHR^a$, $NHC(O)N(R^a)_2$, $NHC(O)NH_2$, $=NH$, $=NOH$, $=NOR^a$, $NR^aS(O)_pNHR^a$,
 $NR^aS(O)_pN(R^a)_2$, $NR^aS(O)_pNH_2$, $NHS(O)_pNHR^a$, $NHS(O)_pN(R^a)_2$, $NHS(O)_pNH_2$,
 $-OC(=O)R^a$, $-OP(O)(OH)_2$ eller R^a .

20 **39.** Forbindelse ifølge hvilke som helst av kravene 1-34, eller et farmasøytisk akseptabelt salt
eller ester derav, eller sammensetning derav for anvendelse i terapeutisk eller profylaktisk
behandling av en *Pneumovirinae* virusinfeksjon eller en respiratorisk syncytial virusinfeksjon.

25 **40.** Forbindelse eller sammensetning for anvendelse ifølge krav 38 eller 39, videre
omfattende administrering av en terapeutisk effektiv mengde av minst ett annet terapeutisk
middel eller sammensetning derav valgt fra gruppen bestående av ribavirin, palivizumab,
motavizumab, RSV-IGIV, MEDI-557, A-60444, MDT-63, BMS-433771, ALN-RSV0 og ALX-
0171 eller blandinger derav.

30 **41.** Forbindelse med formel IX:



Formel IX

eller et farmasøytisk akseptabelt salt eller ester derav, eller sammensetning derav for
 5 anvendelse i medisinsk terapi,
 hvor:

A er $-(C(R^4)_2)_n-$ hvor hvilke som helst $C(R^4)_2$ av nevnte $-(C(R^4)_2)_n-$ kan eventuelt
 erstattes med $-O-$, $-S-$, $S(O)_p-$, NH eller NR^a ;

10 n er 3, 4, 5 eller 6;

hver p er 1 eller 2;

Ar er en C_2 - C_{20} heterocyklylgruppe eller en C_6 - C_{20} arylgruppe, hvor C_2 - C_{20} heterocyklyl-
 gruppen eller C_6 - C_{20} arylgruppen er eventuelt substituert med 1 til 5 R^6 ;

X er $-(CR^{13}R^{14})-$, $-N(CH_2R^{14})-$ eller X er fraværende;

15 Y er N eller CR^7 ;

hver R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^7 eller R^8 er uavhengig H, okso, OR^{11} , $NR^{11}R^{12}$,
 $NR^{11}C(O)R^{11}$, $NR^{11}C(O)OR^{11}$, $NR^{11}C(O)NR^{11}R^{12}$, N_3 , CN , NO_2 , SR^{11} , $S(O)_pR^a$,
 $NR^{11}S(O)_pR^a$, $-C(=O)R^{11}$, $-C(=O)OR^{11}$, $-C(=O)NR^{11}R^{12}$, $-C(=O)SR^{11}$, $-S(O)_p(OR^{11})$,
 $-SO_2NR^{11}R^{12}$, $-NR^{11}S(O)_p(OR^{11})$, $-NR^{11}SO_pNR^{11}R^{12}$, $NR^{11}C(=NR^{11})NR^{11}R^{12}$, halogen,
 20 (C_1-C_8) alkyl, (C_2-C_8) alkenyl, (C_2-C_8) alkynyl, aryl (C_1-C_8) alkyl, C_6 - C_{20} aryl, C_2 - C_{20} hetero-
 cyklyl, (C_3-C_7) cykloalkyl eller (C_4-C_8) karbocyklylalkyl;

to R^4 på tilstøtende karbonatomer, når tatt sammen, kan danne en dobbelbinding
 mellom de to karboner som de er bundet til eller kan danne en (C_3-C_7) cykloalkylring
 hvor ett karbonatom av nevnte (C_3-C_7) cykloalkylring eventuelt kan erstattes med $-O-$,
 25 $-S-$, $-S(O)_p-$, $-NH-$ eller $-NR^a$;

fire R^4 på tilstøtende karbonatomer, når tatt sammen, kan danne en eventuelt
 substituert C_6 -arylring;

to R^4 på samme karbonatom, når tatt sammen, kan danne en (C_3-C_7) cykloalkylring
 hvor ett karbonatom av nevnte (C_3-C_7) cykloalkylring eventuelt kan erstattes med $-O-$,
 30 $-S-$, $-S(O)_p-$, $-NH-$ eller $-NR^a$;

to R^6 på tilstøtende karbonatomer, når tatt sammen, kan danne en (C_3-C_7) cykloalkylring hvor ett karbonatom av nevnte (C_3-C_7) cykloalkylring eventuelt kan erstattes med $-O-$, $-S-$, $-S(O)_p-$, $-NH-$ eller $-NR^a-$;

hvilke som helst R^6 tilstøtende til den obligate karbonylgruppe av nevnte Ar, når tatt sammen med R^3 , kan danne en binding eller en $-(C(R^5)_2)_m$ -gruppe hvor m er 1 eller 2; hvilke som helst R^6 tilstøtende til den obligate karbonylgruppe av nevnte Ar, når tatt sammen med R^2 , kan danne en binding;

hver R^a er uavhengig (C_1-C_8) alkyl, (C_1-C_8) haloalkyl, (C_2-C_8) alkenyl, (C_2-C_8) alkynyl, aryl (C_1-C_8) alkyl, C_6-C_{20} aryl, C_2-C_{20} heterocyklyl, (C_3-C_7) cykloalkyl eller (C_4-C_8) karbocyklylalkyl hvor hvilke som helst (C_1-C_8) alkyl, (C_1-C_8) haloalkyl, (C_2-C_8) alkenyl eller (C_2-C_8) alkynyl av R^a er eventuelt substituert med en eller flere OH, NH_2 , CO_2H , C_2-C_{20} heterocyklyl, og hvor hvilke som helst aryl (C_1-C_8) alkyl, C_6-C_{20} aryl, C_2-C_{20} heterocyklyl, (C_3-C_7) cykloalkyl eller (C_4-C_8) karbocyklylalkyl av R^a er eventuelt substituert med en eller flere OH, NH_2 , CO_2H , C_2-C_{20} heterocyklyl eller (C_1-C_8) alkyl;

hver R^{11} eller R^{12} er uavhengig H, (C_1-C_8) alkyl, (C_2-C_8) alkenyl, (C_2-C_8) alkynyl, aryl (C_1-C_8) alkyl, C_6-C_{20} aryl, C_2-C_{20} heterocyklyl, (C_3-C_7) cykloalkyl, (C_4-C_8) karbocyklylalkyl, $-C(=O)R^a$, $-S(O)_pR^a$ eller aryl (C_1-C_8) alkyl; eller R^{11} og R^{12} tatt sammen med et nitrogen til hvilket de begge er bundet danner en 3- til 7-leddet hereocyklik ring hvor hvilket som helst karbonatom av nevnte hereocykliske ring eventuelt kan være erstattet med $-O-$, $-S-$, $-S(O)_p-$, $-NH-$, $-NR^a-$ eller $-C(O)-$;

R^{13} er H eller (C_1-C_8) alkyl;

R^{14} er H, (C_1-C_8) alkyl, $NR^{11}R^{12}$, $NR^{11}C(O)R^{11}$, $NR^{11}C(O)OR^{11}$, $NR^{11}C(O)NR^{11}R^{12}$, $NR^{11}S(O)_pR^a$, $-NR^{11}S(O)_p(OR^{11})$ eller $NR^{11}SO_pNR^{11}R^{12}$; og

hvor hver (C_1-C_8) alkyl, (C_2-C_8) alkenyl, (C_2-C_8) alkynyl, aryl (C_1-C_8) alkyl, C_6-C_{20} aryl, C_2-C_{20} heterocyklyl, (C_3-C_7) cykloalkyl eller (C_4-C_8) karbocyklylalkyl av hver R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^{11} eller R^{12} er, uavhengig, eventuelt substituert med en eller flere okso, halogen, hydroksy, NH_2 , CN, N_3 , $N(R^a)_2$, NHR^a , SH, SR^a , $S(O)_pR^a$, OR^a , (C_1-C_8) alkyl, (C_1-C_8) haloalkyl, $-C(O)R^a$, $-C(O)H$, $-C(=O)OR^a$, $-C(=O)OH$, $-C(=O)N(R^a)_2$, $-C(=O)NHR^a$, $-C(=O)NH_2$, $NHS(O)_pR^a$, $NR^aS(O)_pR^a$, $NHC(O)R^a$, $NR^aC(O)R^a$, $NHC(O)OR^a$, $NR^aC(O)OR^a$, $NR^aC(O)NHR^a$, $NR^aC(O)N(R^a)_2$, $NR^aC(O)NH_2$, $NHC(O)NHR^a$, $NHC(O)N(R^a)_2$, $NHC(O)NH_2$, $=NH$, $=NOH$, $=NOR^a$, $NR^aS(O)_pNHR^a$, $NR^aS(O)_pN(R^a)_2$, $NR^aS(O)_pNH_2$, $NHS(O)_pNHR^a$, $NHS(O)_pN(R^a)_2$, $NHS(O)_pNH_2$, $-OC(=O)R^a$, $-OP(O)(OH)_2$ eller R^a .

42. Forbindelse ifølge hvilke som helst av kravene 1 til 34, eller et farmasøytisk akseptabelt salt eller ester derav eller sammensetning derav for anvendelse i medisinsk terapi.

- 5 **43.** Forbindelse eller sammensetning for anvendelse ifølge krav 41 eller krav 42, videre omfattende administrering av en terapeutisk effektiv mengde av minst ett annet terapeutisk middel eller sammensetning derav valgt fra gruppen bestående av ribavirin, palivizumab, motavizumab, RSV-IGIV, MEDI-557, A-60444, MDT-63, BMS-433771, ALN-RSV0 og ALX-0171 eller blandinger derav.