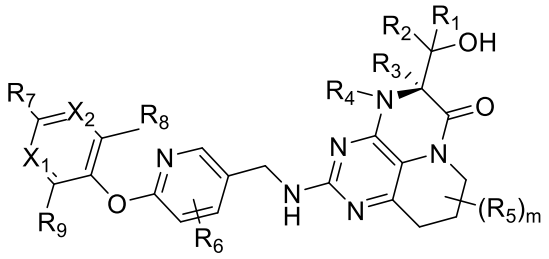
Claims

1. A compound having a structure of formula I or a pharmaceutically acceptable salt, isotopic derivative, or stereoisomer thereof:



Formula I

wherein, X_1 and X_2 are both N;

R_1 and R_2 each independently represent hydrogen, halogen, (C_1-C_6) alkyl, or halogenated (C_1-C_6) alkyl;

R_3 represents hydrogen, halogen, (C_1-C_6) alkyl, halogenated (C_1-C_6) alkyl;

R_4 represents hydrogen, halogen, (C_1-C_6) alkyl, halogenated (C_1-C_6) alkyl, or R_4 and R_2 form a 4-8 membered ring;

R_5 each independently represents hydrogen, halogen, (C_1-C_6) alkyl, halogenated (C_1-C_6) alkyl, (C_3-C_8) cycloalkyl, halogenated (C_3-C_8) cycloalkyl, or two R_5 connected to the same carbon atom form a 3-5 membered ring; m is 0, 1, 2 or 3;

R_6 each independently represents hydrogen, halogen, -CN, (C_1-C_6) alkyl, halogenated (C_1-C_6) alkyl;

R_7 represents hydrogen, halogen, (C_1-C_6) alkyl, halogenated (C_1-C_6) alkyl, (C_3-C_8) cycloalkyl, halogenated (C_3-C_8) cycloalkyl, -OR_a, -halogenated OR_a, -SR_a, -halogenated SR_a;

R_8 represents hydrogen, (C_1-C_6) alkyl, halogenated (C_1-C_6) alkyl;

R_9 represents halogen, (C_1-C_6) alkyl, halogenated(C_1-C_6) alkyl, (C_3-C_8) cycloalkyl, halogenated(C_3-C_8) cycloalkyl, -(C_1-C_6) alkylene CN, - halogenated (C_1-C_6) alkylene CN, -(C_3-C_8) cycloalkylene CN, - halogenated(C_3-C_8) cycloalkylene CN, -NR_aR_a', -(C_1-C_6) alkylene NR_aR_a', - halogenated(C_1-C_6) alkylene NR_aR_a', wherein R_a, R_a' can form a 4-8 membered ring with the N to which they are connected.

R_a and R_a' each independently represent hydrogen, (C_1-C_6) alkyl, halogenated (C_1-C_6) alkyl, (C_3-C_8) cycloalkyl or halogenated (C_3-C_8) cycloalkyl.

2. The compound having a structure of formula I according to claim 1 or a pharmaceutically acceptable salt, isotopic derivative, stereoisomer thereof, wherein R_4 is selected from (C_1-C_6) alkyl and halogenated (C_1-C_6) alkyl.

3. The compound having a structure of formula I according to claim 1, or a pharmaceutically acceptable salt, isotopic derivative, stereoisomer thereof, wherein R_5 is selected from hydrogen, halogen, (C_1-C_6) alkyl, halogenated (C_1-C_6) alkyl.

4. The compound having a structure of formula I according to claim 1, or a pharmaceutically acceptable salt, isotopic derivative, stereoisomer thereof, wherein R_5 is a halogen.

5. The compound having a structure of formula I according to claim 1, or a pharmaceutically acceptable salt, isotopic derivative, stereoisomer thereof, wherein R_5 is fluorine.

6. The compound having a structure of formula I according to claim 1, or a pharmaceutically acceptable salt, isotopic derivative, stereoisomer thereof, wherein R_6 is hydrogen.

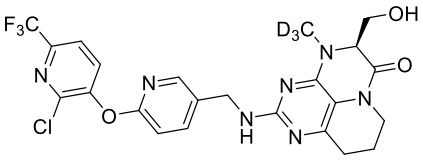
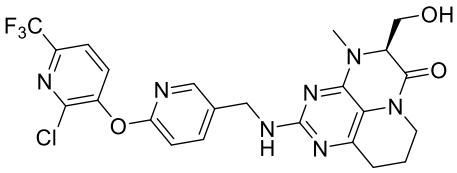
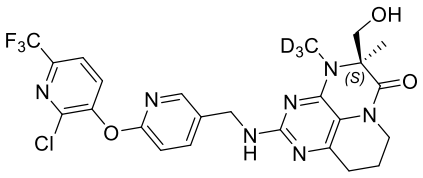
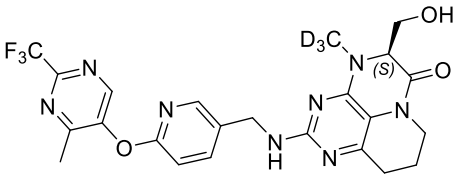
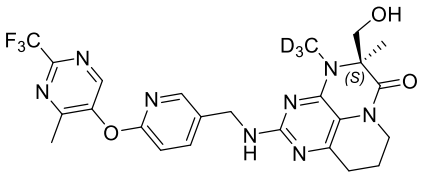
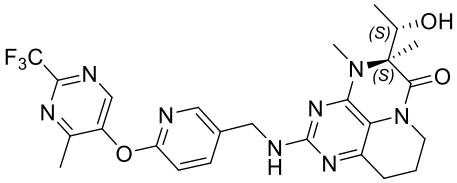
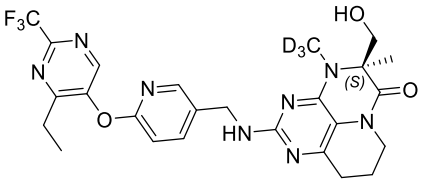
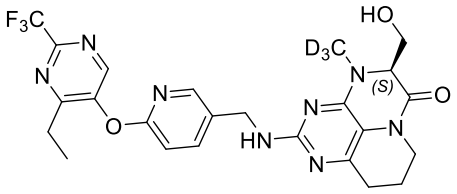
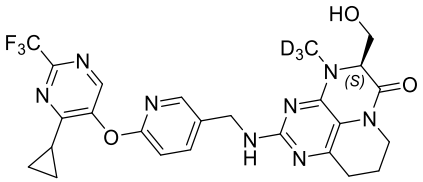
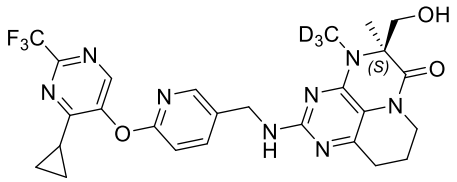
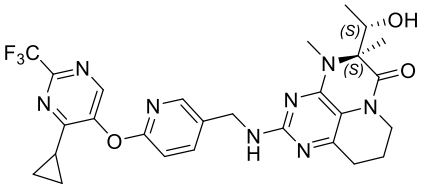
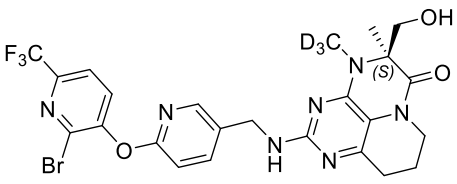
7. The compound having a structure of formula I according to claim 1, or a pharmaceutically acceptable salt, isotopic derivative, or stereoisomer thereof, wherein X_1 and X_2 are both N, and R_9 is selected from (C_1-C_6) alkyl, halogenated (C_1-C_6) alkyl, (C_3-C_8) cycloalkyl, or halogenated (C_3-C_8) cycloalkyl.

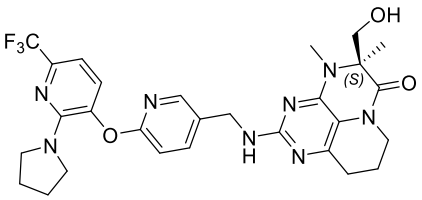
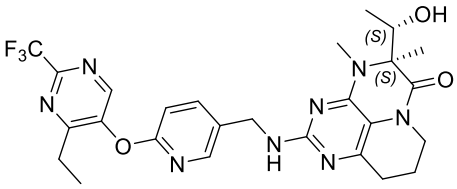
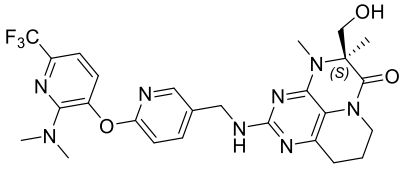
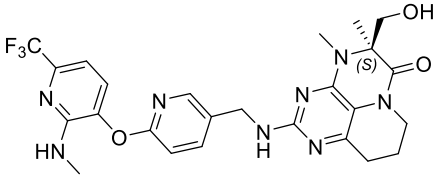
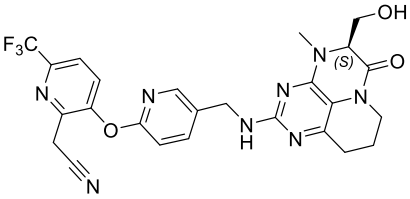
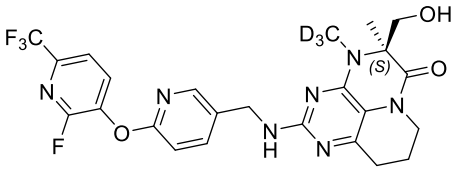
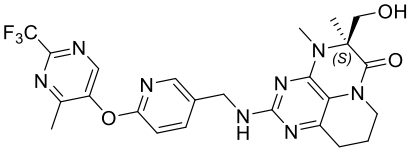
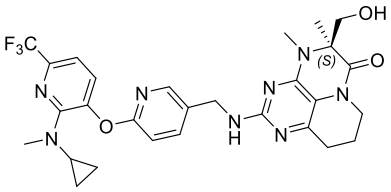
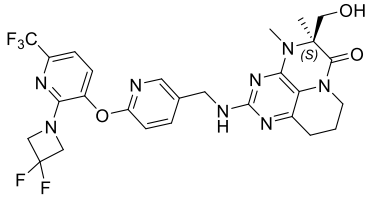
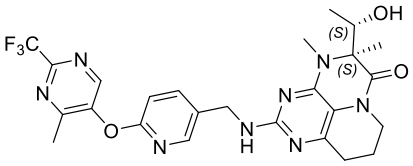
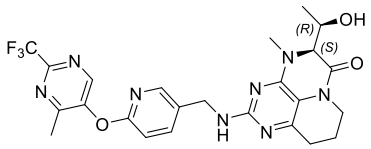
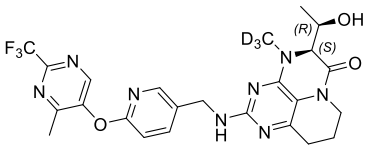
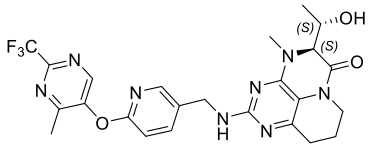
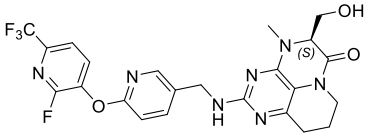
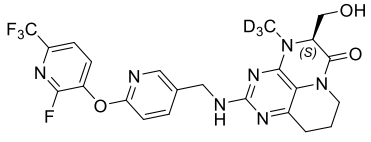
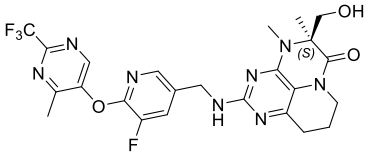
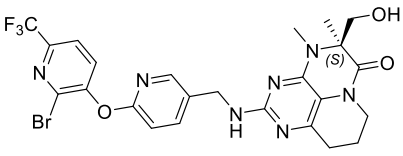
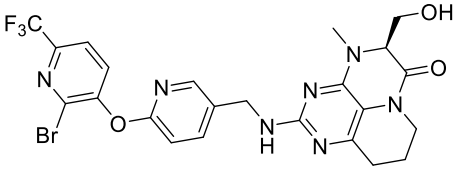
8. The compound having a structure of formula I according to claim 1, or a pharmaceutically acceptable salt, isotopic derivative, stereoisomer thereof, wherein when X_1 and X_2 are both N, R_7 is not a halogen.

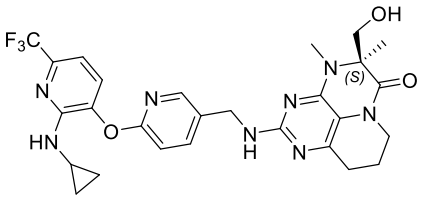
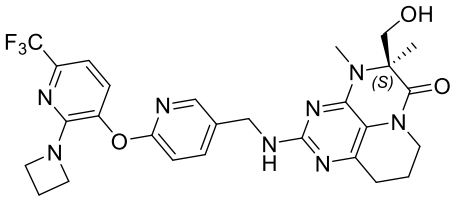
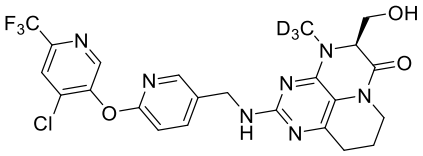
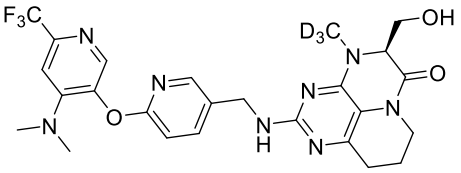
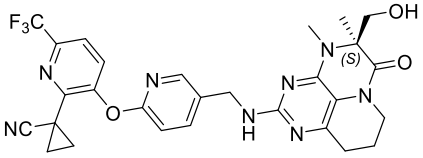
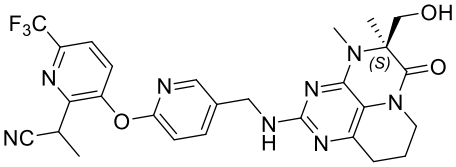
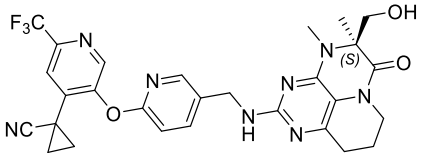
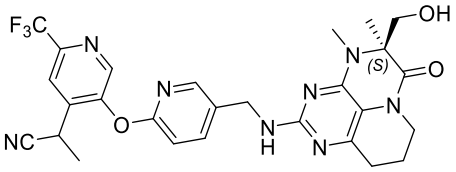
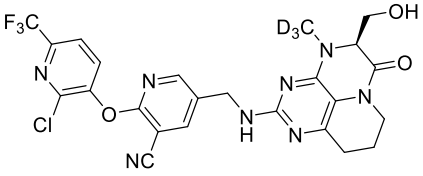
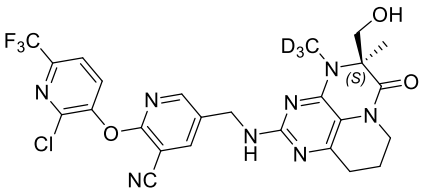
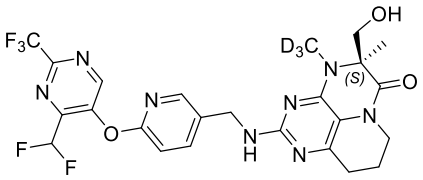
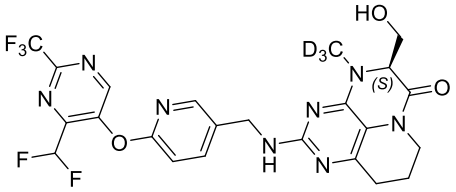
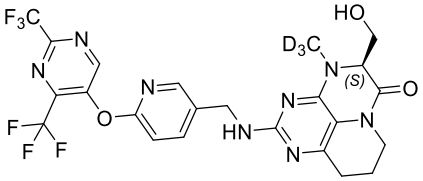
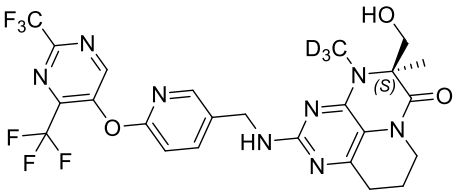
9. The compound having a structure of formula I according to claim 1, or a pharmaceutically acceptable salt, isotopic derivative, stereoisomer thereof, wherein R_7 is selected from (C_1-C_6) alkyl, halogenated (C_1-C_6) alkyl.

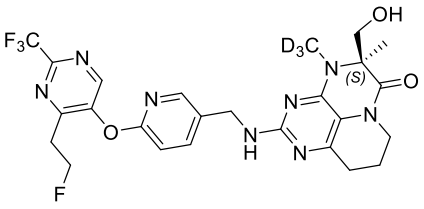
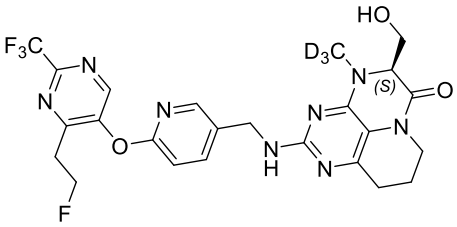
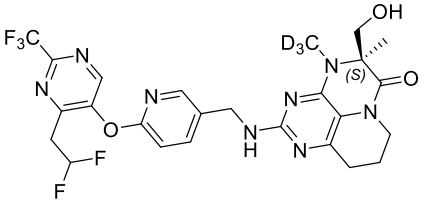
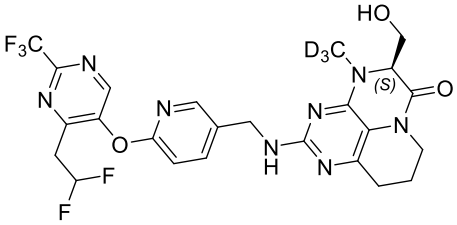
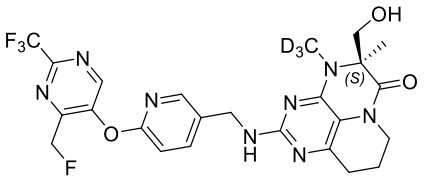
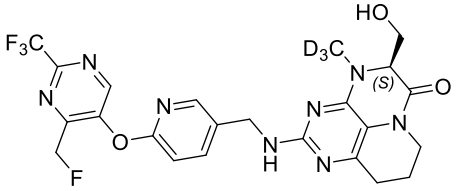
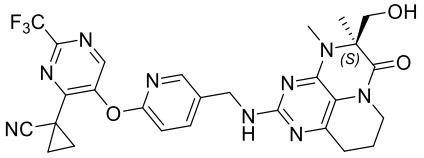
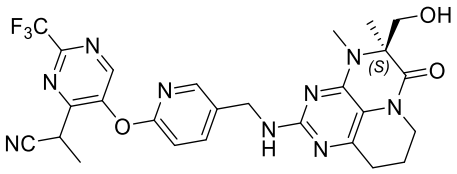
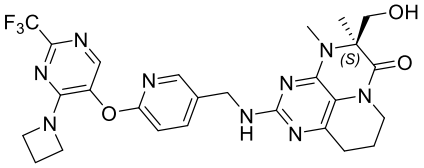
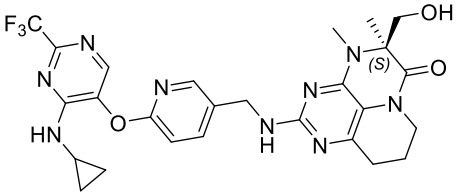
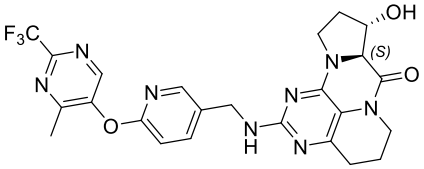
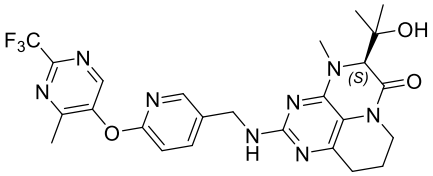
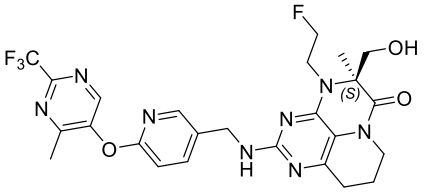
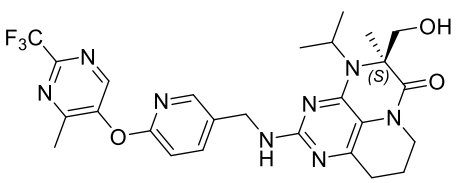
10. A compound having a structure of formula I according to claim 1, or a pharmaceutically acceptable salt, isotopic derivative, or stereoisomer thereof, wherein, when one of X_1 and X_2 is N and the other is CH, R_9 represents (C_1-C_6) alkyl, halogenated (C_1-C_6) alkyl, (C_3-C_8) cycloalkyl, or halogenated (C_3-C_8) cycloalkyl.

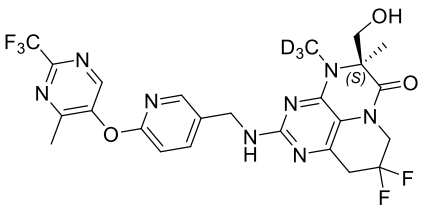
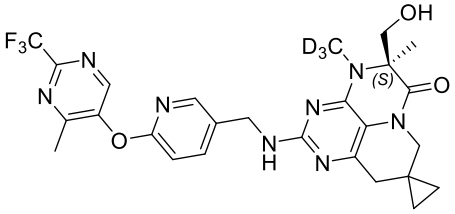
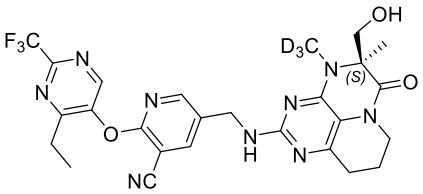
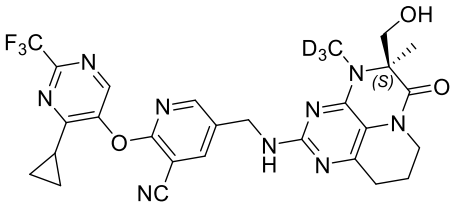
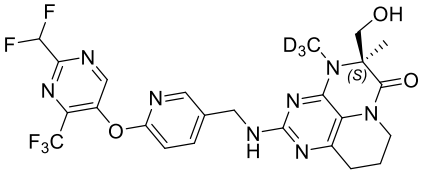
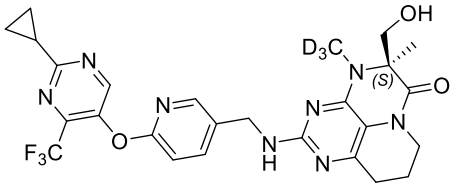
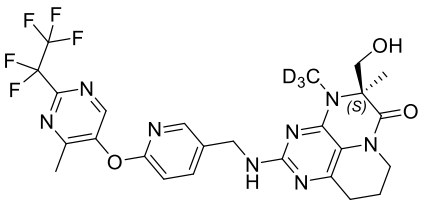
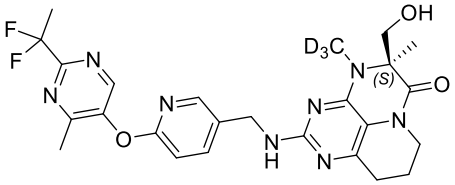
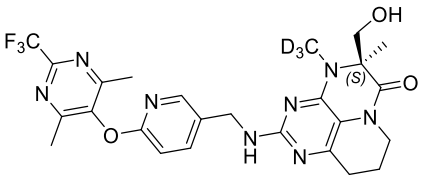
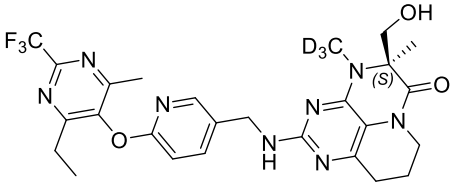
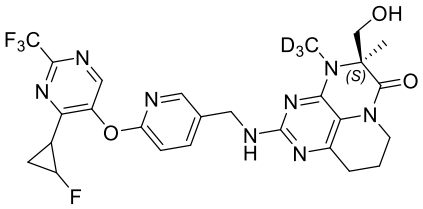
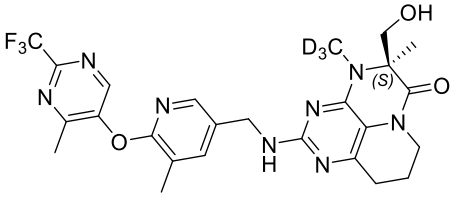
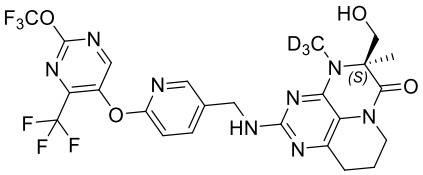
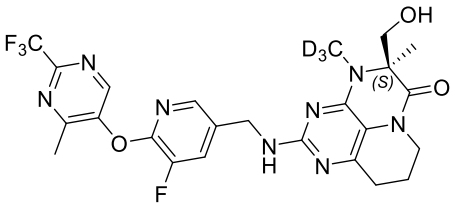
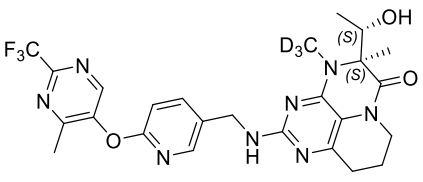
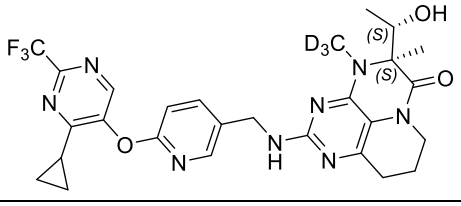
11. A compound, or a pharmaceutically acceptable salt, isotopic derivative, or stereoisomer thereof, wherein the compound has the following structure:

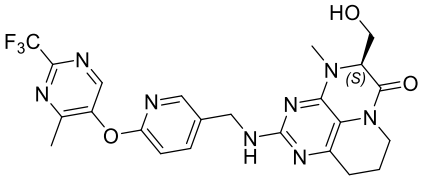
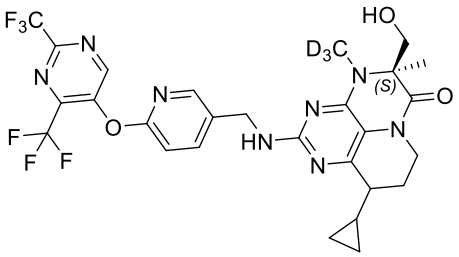
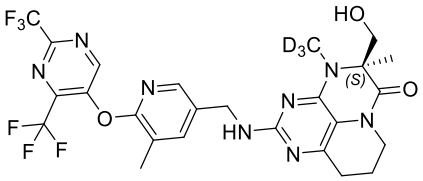
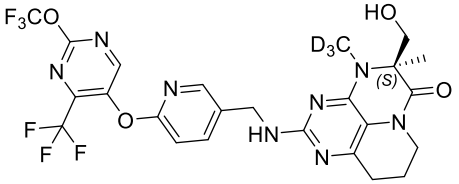
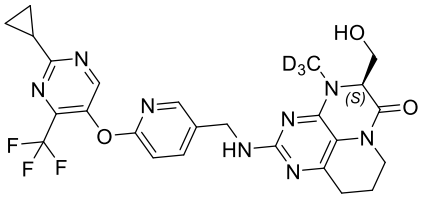
Serial number	Compound structure	Serial number	Compound structure
1		2	
3		4	
5		6	
7		8	
9		10	
11		12	

13		14	
15		16	
17		18	
19		20	
21		22	
23		24	
25		26	
27		28	
29		30	

31		32	
33		34	
35		36	
37		38	
39		40	
41		42	
43		44	

45		46	
47		48	
49		50	
51		52	
53		54	
55		56	
57		58	

59		60	
61		62	
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79			

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12. A pharmaceutical composition comprising a compound according to claim 1 or a pharmaceutically acceptable salt, isotopic derivative, stereoisomer thereof, and optionally a pharmaceutically acceptable carrier.