

【公報種別】特許法第17条の2の規定による補正の掲載
 【部門区分】第3部門第2区分
 【発行日】令和7年1月31日(2025.1.31)

【国際公開番号】WO2022/165076
 【公表番号】特表2024-505250(P2024-505250A)
 【公表日】令和6年2月5日(2024.2.5)
 【年通号数】公開公報(特許)2024-022
 【出願番号】特願2023-546234(P2023-546234)
 【国際特許分類】

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C 0 7 D 4 0 1 / 1 4 (2 0 0 6 . 0 1)
 C 0 7 D 4 0 5 / 1 4 (2 0 0 6 . 0 1)
 C 0 7 D 4 0 5 / 0 6 (2 0 0 6 . 0 1)
 A 6 1 K 3 1 / 4 9 6 (2 0 0 6 . 0 1)
 A 6 1 P 3 / 0 0 (2 0 0 6 . 0 1)
 C 0 7 D 4 0 3 / 0 6 (2 0 0 6 . 0 1)
 C 0 7 D 4 7 1 / 0 4 (2 0 0 6 . 0 1)
 A 6 1 K 3 1 / 4 3 7 (2 0 0 6 . 0 1)
 C 0 7 D 4 1 3 / 1 4 (2 0 0 6 . 0 1)
 A 6 1 K 3 1 / 4 5 4 (2 0 0 6 . 0 1)
 A 6 1 K 3 1 / 5 0 6 (2 0 0 6 . 0 1)
 C 0 7 D 4 0 9 / 1 4 (2 0 0 6 . 0 1)
 C 0 7 D 4 8 7 / 0 8 (2 0 0 6 . 0 1)
 A 6 1 K 3 1 / 4 5 4 5 (2 0 0 6 . 0 1)
 C 0 7 D 4 5 1 / 0 0 (2 0 0 6 . 0 1)

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【 F I 】

C 0 7 D 4 0 1 / 1 4
 C 0 7 D 4 0 5 / 1 4 C S P
 C 0 7 D 4 0 5 / 0 6
 A 6 1 K 3 1 / 4 9 6
 A 6 1 P 3 / 0 0
 C 0 7 D 4 0 3 / 0 6
 C 0 7 D 4 7 1 / 0 4 1 0 3 Z
 A 6 1 K 3 1 / 4 3 7
 C 0 7 D 4 1 3 / 1 4
 A 6 1 K 3 1 / 4 5 4
 A 6 1 K 3 1 / 5 0 6
 C 0 7 D 4 0 9 / 1 4
 C 0 7 D 4 8 7 / 0 8
 A 6 1 K 3 1 / 4 5 4 5
 C 0 7 D 4 7 1 / 0 4 1 0 7 E
 C 0 7 D 4 5 1 / 0 0

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【手続補正書】

【提出日】令和7年1月22日(2025.1.22)

【手続補正1】

【補正対象書類名】特許請求の範囲

【補正対象項目名】全文

【補正方法】変更

【補正の内容】

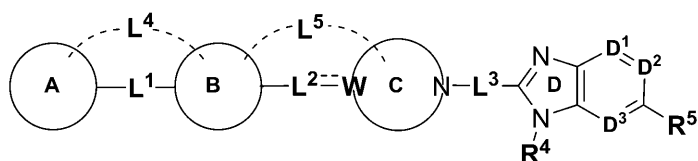
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【特許請求の範囲】

【請求項 1】

式 I の化合物、またはその薬学的に許容される塩、もしくは立体異性体であって：

【化 1】



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I

式中、Aは、置換もしくは非置換のアリール、置換もしくは非置換のヘテロアリール、置換もしくは非置換のシクロアルキル、 $-NMe_2$ 、または $-CF_3$ であり；

環Bは、置換もしくは非置換のアリール、置換もしくは非置換のヘテロアリール、または置換もしくは非置換の二環式であり；

環Cは、置換もしくは非置換のヘテロシクロアルキル、または置換もしくは非置換のヘテロシクロアルケニルであり、それぞれ図示のように L^3 に結合した少なくとも1つのNを含み；

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D^1 、 D^2 、及び D^3 のうち0、1、または2つはNであり、かつ残りはCHまたは CR^6 であり；

Wは、N、 CR^{14} 、またはCであり；Wが CR^{14} である場合、隣接する破線は単結合を示し；WがCの場合、隣接する破線は二重結合を示すか、または L^2 が $-C(H)=$ であり；

L^1 は、結合、 $-O-$ 、 $-CH_2-$ 、 $-NH-$ 、 $-N(Me)-$ 、 $-N(Et)-$ 、 $-OCH_2-$ 、 $-OC(H, Me)-$ 、 $-CH_2O-$ 、 $-NHCH_2-$ 、 $-N(Me)CH_2-$ 、及び $-SO_2NH-$ からなる群から選択され；

L^2 は、結合、 $-C(O)-$ 、 $-CH_2-$ 、 $-C(H)=$ 、 $-SO_2-$ 、 $-O-$ 、 $-CF_2-$ 、 $-CHF-$ 、 $-CH(OH)-$ 、 $-NH-$ 、 $-N(Me)-$ 、及び

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【化 2】



からなる群から選択され；

L^3 は、 $-CH_2-$ 、または、 $-C(O)-$ であり；

L^4 が存在しないか、または L^4 が L^1 ならびに環A及びBと一緒になって縮合三環を形成し、かつ L^5 が存在せず；

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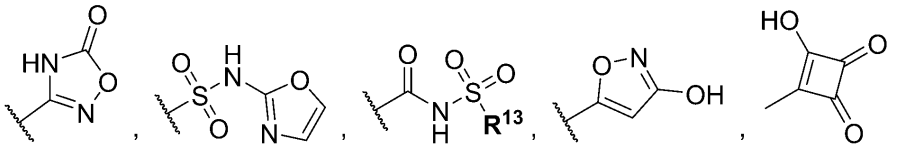
L^5 が存在しないか、または L^5 が L^2 ならびに環B及びCと一緒になって縮合三環を形成し、 L^4 が存在せず；

R^4 は、非置換アルキル、置換アルキル、非置換アリールアルキレン、置換アリールアルキレン、非置換ヘテロアルキル、置換ヘテロアルキル、非置換ヘテロアリールアルキレン、置換ヘテロアリールアルキレン、非置換ヘテロシクロアルキルアルキレン、または置換ヘテロシクロアルキルアルキレンであり；

R^5 は、 $-COOH$ 、 $-COCF_3$ 、 $-C(OH)CF_3$ 、 $-CONHCN$ 、 $-CONHOH$ 、 $CONHOMe$ 、 $-CONHSO_2N(Me)_2$ 、 $-PO_3H_2$ 、 $-PO(Me)(OH)$ 、 $-SO_3H$ 、 $-SO_2NH_2$ 、 $-SO_2NHMe$ 、 $-B(OH)_2$ 、

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【化3】



及びテトラゾリルからなる群から選択され；

各 R^6 は、アルキル、置換アルキル、ハロ、ヒドロキシル、アルコキシル、 $R^{11}R^{12}NCO-$ 、及び $R^{11}R^{12}N-$ からなる群から独立して選択され；

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R^{11} は水素、またはアルキルであり；

R^{12} は水素、またはアルキルであり；

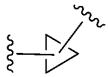
R^{13} は水素、またはアルキルであり；

R^{14} は、水素、シアノ、ハロ、ヒドロキシル、アルキル、ハロアルキル、メチル、 CH_2F 、または CH_2OH であり；

式中、 L^1 が $-CH_2O-$ であり、 L^4 が存在せず、かつ L^5 が存在しないならば、 L^2 は、 $-C(O)-$ 、 $-CH_2-$ 、 $-C(H)=$ 、 $-SO_2-$ 、 $-O-$ 、もしくは

【化4】

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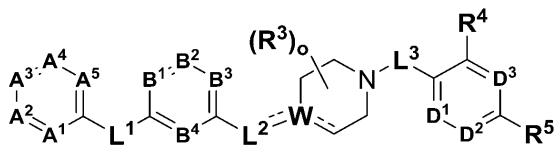
であるか、または L^3 は、 $-C(O)-$ であるか、あるいはその両方である、前記化合物、またはその薬学的に許容される塩、もしくは立体異性体。

【請求項2】

式 XXX の化合物、またはその薬学的に許容される塩、もしくは立体異性体であって：

【化5】

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XXX

式中、 W は N 、 CH 、または C であり； W が CH の場合、隣接する破線は単結合を示し； W が C の場合、隣接する1つの破線は二重結合を示し；

A^1 、 A^2 、 A^3 、 A^4 、及び A^5 のうち0、1、または2つは N であり、かつ残りは CH 、または CR^1 であり；

B^1 、 B^2 、 B^3 、及び B^4 のうち0、1、または2つは N であり、かつ残りは CH または CR^2 であり；

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D^1 、 D^2 、及び D^3 のうち0、1、または2つは N であり、かつ残りは CH または CR^6 であり；

L^1 は、 $-O-$ 、 $-CH_2-$ 、 $-NH-$ 、 $-N(Me)-$ 、 $-N(Et)-$ 、 $-OCH_2-$ 、 $-CH_2O-$ 、 $-NHCH_2-$ 、 $-N(Me)CH_2-$ 、及び $-SO_2NH-$ からなる群から選択され；

L^2 は、結合、 $-C(O)-$ 、 $-CH_2-$ 、 $-C(H)=$ 、 $-SO_2-$ 、 $-O-$ 、 $-CF_2-$ 、 $-CHF-$ 、 $-CH(OH)-$ 、 $NH-$ 、 $-N(Me)-$ 、及び

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または CR^1 であり；

D^1 、 D^2 、及び D^3 のうち 0、1、または 2 つは N であり、かつ残りは CH または CR^6 であり；

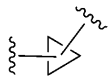
各 R^1 は、アルキル、置換アルキル、ハロ、シアノ、アジド、アルコキシ、ハロアルコキシ、及び $R^1 R^1 R^1 NCO-$ からなる群から独立して選択され；

L^1 は、 $-O-$ 、 $-CH_2-$ 、 $-NH-$ 、 $-N(Me)-$ 、 $-N(Et)-$ 、 $-OCH_2-$ 、 $-CH_2O-$ 、 $-NHCH_2-$ 、 $-N(Me)CH_2-$ 、及び $-SO_2NH-$ からなる群から選択され；

L^2 は、結合、 $-C(O)-$ 、 $-CH_2-$ 、 $-C(H)=$ 、 $-SO_2-$ 、 $-O-$ 、 $-CF_2-$ 、 $-CHF-$ 、 $-CH(OH)-$ 、 $-NH-$ 、 $-N(Me)-$ 、及び

【化 9】

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からなる群から選択され；

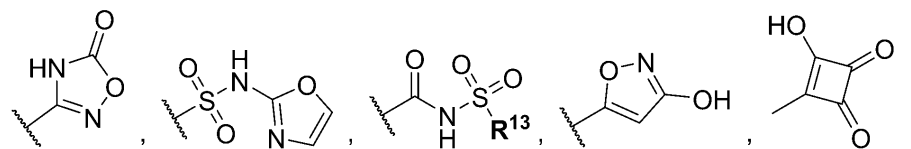
L^3 は、 $-C_2-$ 、または $-C(O)-$ であり；

各 R^3 は、アルキル、置換アルキル、ハロ、シアノ、アジド、アルコキシ、ハロアルコキシ、及び $R^1 R^1 R^1 NCO-$ からなる群から独立して選択され；

R^4 は、非置換アルキル、置換アルキル、非置換アリアルアルキレン、置換アリアルアルキレン、ヘテロアルキル、置換ヘテロアルキル、非置換ヘテロアリアルアルキレン、置換ヘテロアリアルアルキレン、非置換ヘテロシクロアルキルアルキレン、または置換ヘテロシクロアルキルアルキレンであり；

R^5 は、 $-COOH$ 、 $-COCF_3$ 、 $-C(OH)CF_3$ 、 $-CONHCN$ 、 $-CONHOH$ 、 $CONHOMe$ 、 $-CONHSO_2N(Me)_2$ 、 $-PO_3H_2$ 、 $-PO(Me)(OH)$ 、 $-SO_3H$ 、 $-SO_2NH_2$ 、 $-SO_2NHMe$ 、 $-B(OH)_2$ 、

【化 10】



及びテトラゾリルからなる群から選択され；

各 R^6 は独立して、F 及びメチルからなる群から選択され；

R^1 は水素、またはアルキルであり；

R^2 は水素、またはアルキルであり；

R^3 は、水素、またはアルキルであり；かつ

o は、1、2、3、または 4 である、前記化合物、またはその薬学的に許容される塩、もしくはは立体異性体。

【請求項 4】

L^2 が、 $-CH_2-$ 、 $-C(O)-$ 、または $-SO_2-$ である、請求項 1 ~ 3 のいずれか 1 項に記載の化合物。

【請求項 5】

L^2 が $-CH=$ または $-O-$ である、請求項 1 ~ 3 のいずれか 1 項に記載の化合物。

【請求項 6】

L^2 が、 $-CF_2-$ 、 $-CHF-$ 、または $-CHOH-$ である、請求項 1 ~ 3 のいずれか 1 項に記載の化合物。

【請求項 7】

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L^2 が $-CH_2-$ である、請求項 1 ~ 3 のいずれか 1 項に記載の化合物。

【請求項 8】

L^2 が $-NH-$ または $-N(Me)-$ である、請求項 1 ~ 3 のいずれか 1 項に記載の化合物。

【請求項 9】

L^2 が結合である、請求項 2 に記載の式 XXX の化合物。

【請求項 10】

L^1 が、 $-CH_2O-$ 、または $-OCH_2-$ である、請求項 2 に記載の式 XXX の化合物。

【請求項 11】

以下から選択される 化合物、またはその薬学的に許容される塩もしくは溶媒和物：

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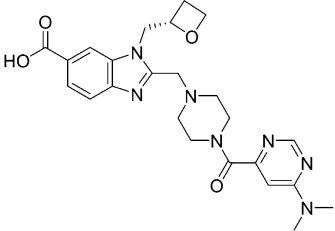
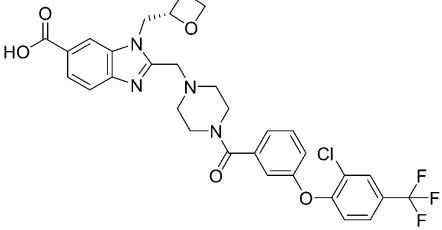
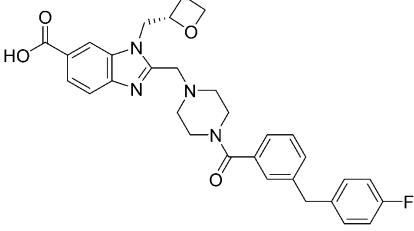
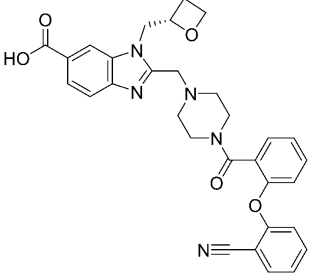
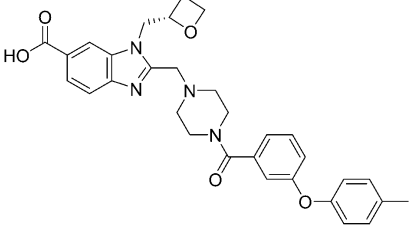
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【表 1 - 1】

化合物	構造
1	
2	
3	
4	
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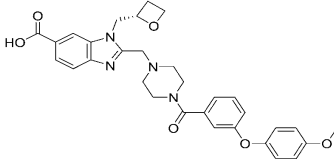
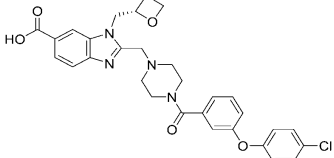
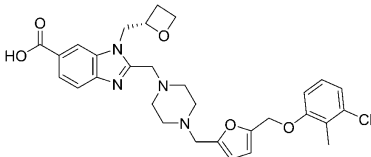
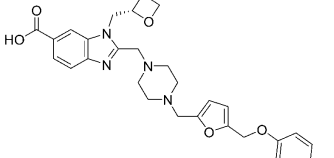
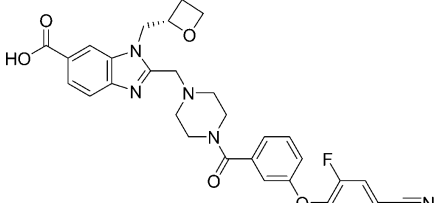
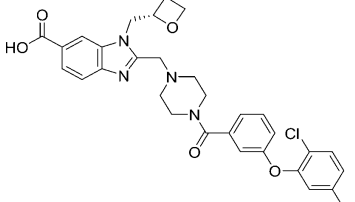
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【表 1 - 2】

化合物	構造
6	
7	
8	
9	
10	
11	

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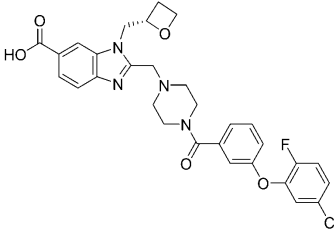
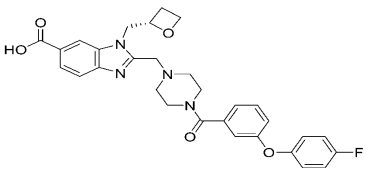
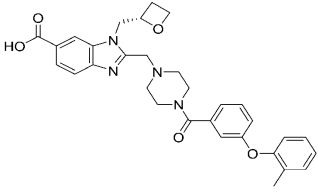
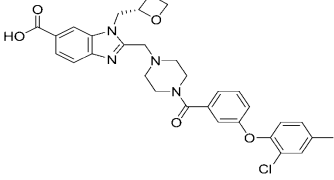
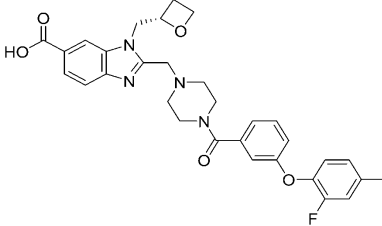
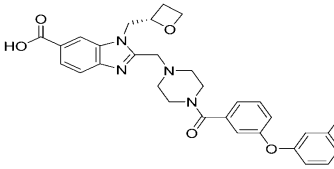
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【表 1 - 3】

化合物	構造
12	
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14	
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16	
17	

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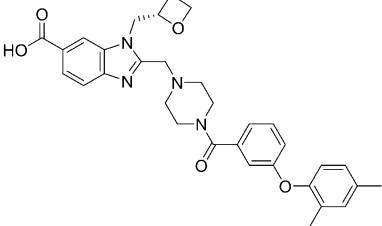
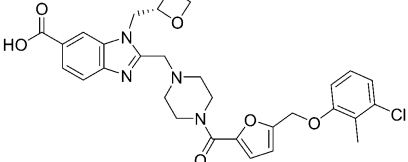
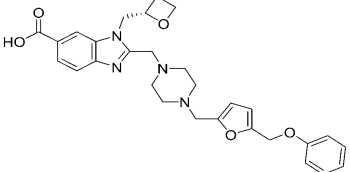
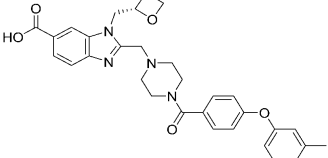
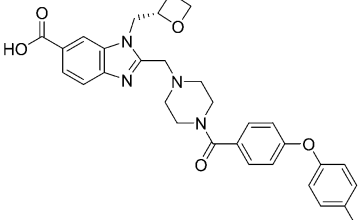
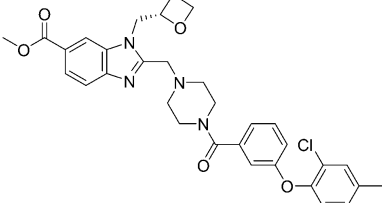
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【表 1 - 4】

化合物	構造
18	
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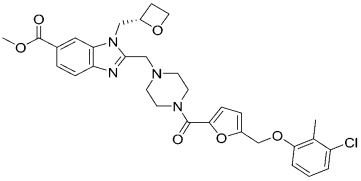
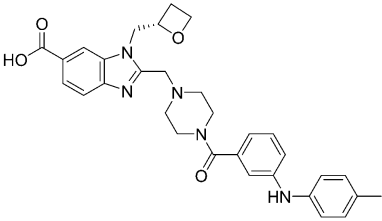
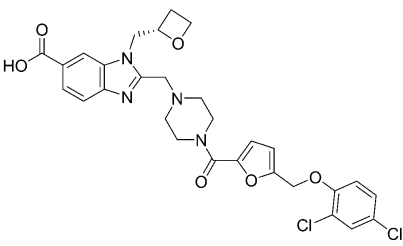
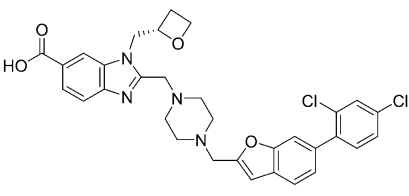
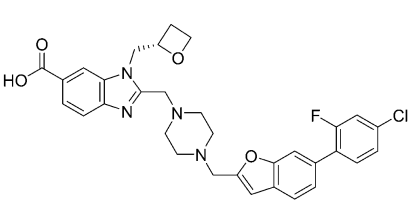
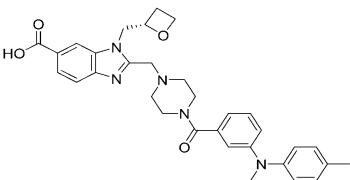
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【表 1 - 5】

化合物	構造
24	
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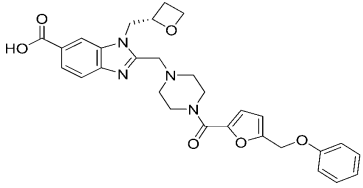
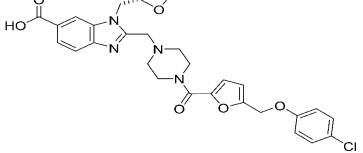
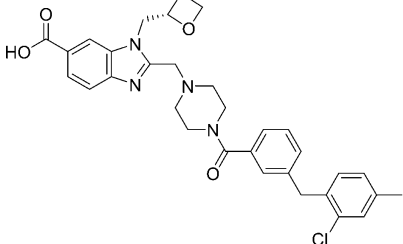
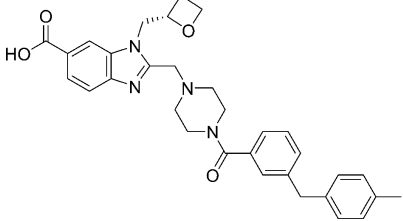
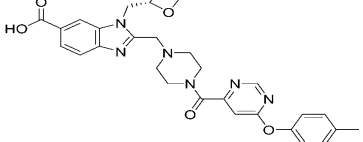
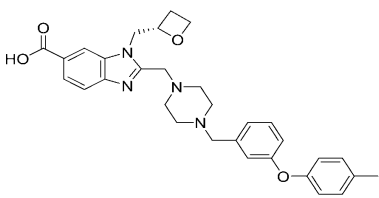
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【表 1 - 6】

化合物	構造
30	
31	
32	
33	
34	
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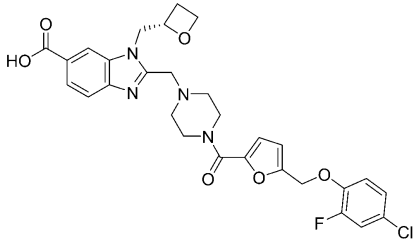
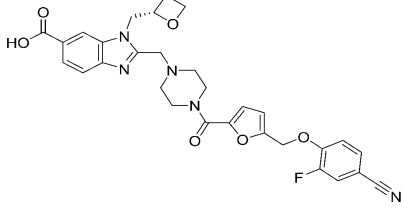
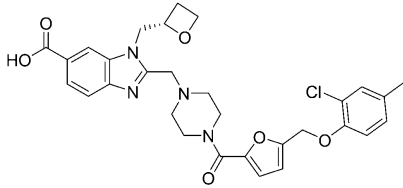
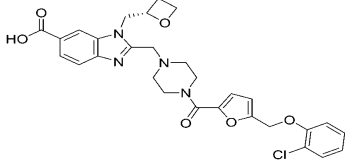
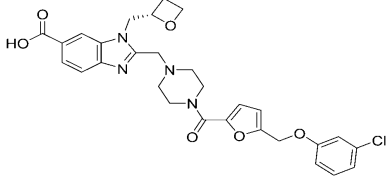
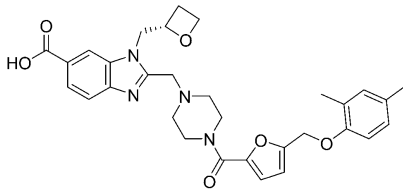
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【表 1 - 7】

化合物	構造
36	
37	
38	
39	
40	
41	

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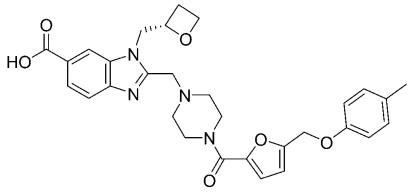
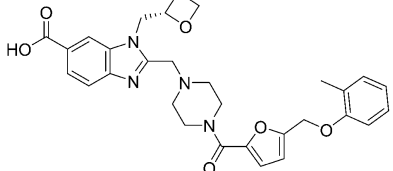
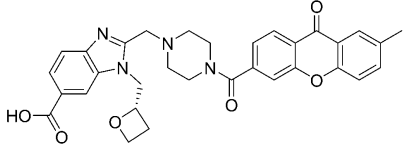
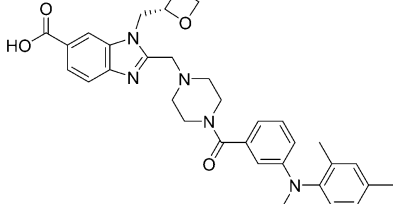
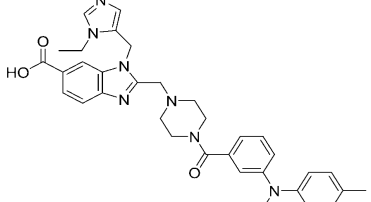
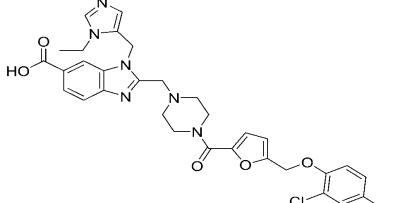
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【表 1 - 8】

化合物	構造
42	
43	
44	
45	
46	
47	

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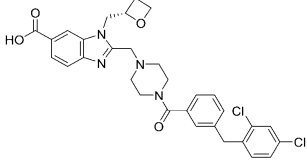
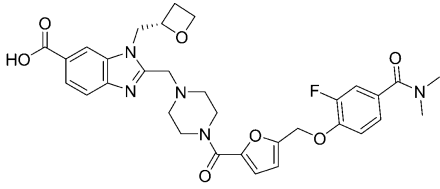
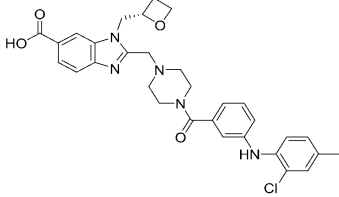
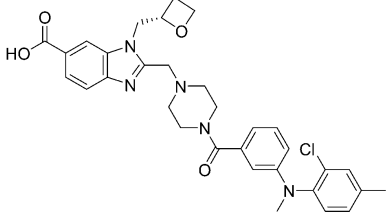
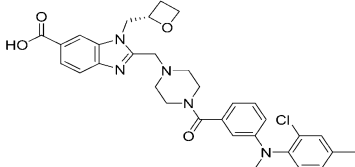
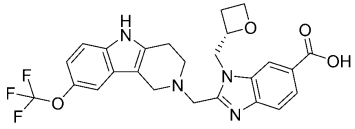
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【表 1 - 9】

化合物	構造
48	
49	
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51	
52	
53	

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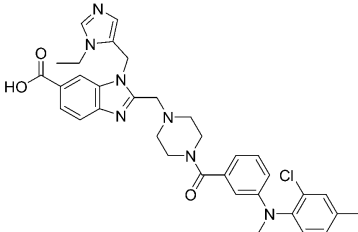
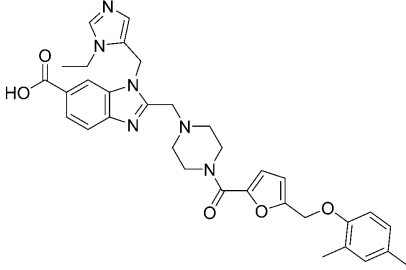
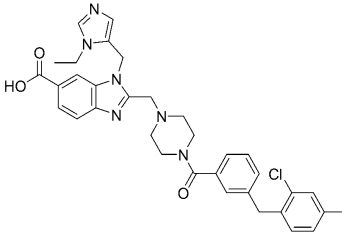
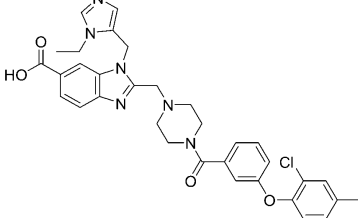
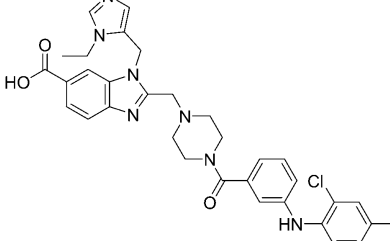
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【表 1 - 10】

化合物	構造
54	
55	
56	
57	
58	

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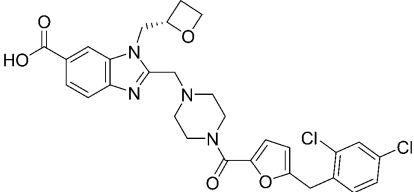
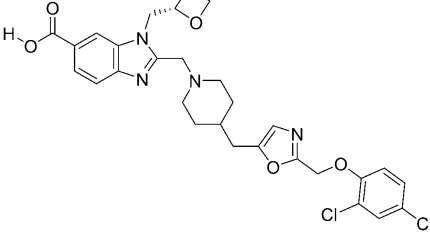
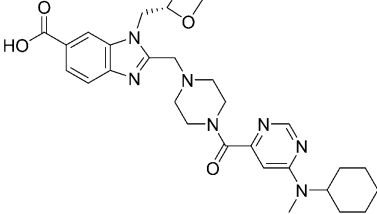
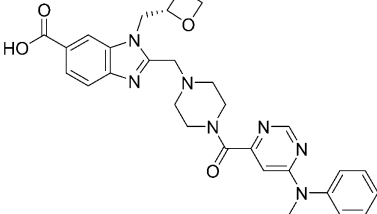
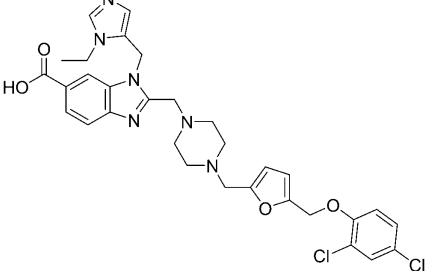
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【表 1 - 1 1】

化合物	構造
59	
60	
61	
62	
63	

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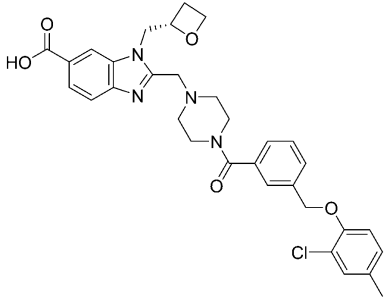
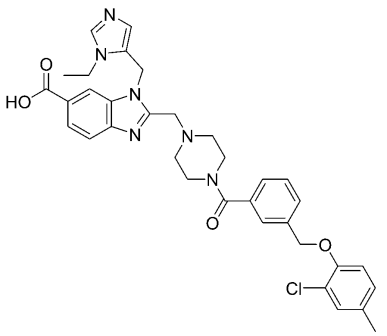
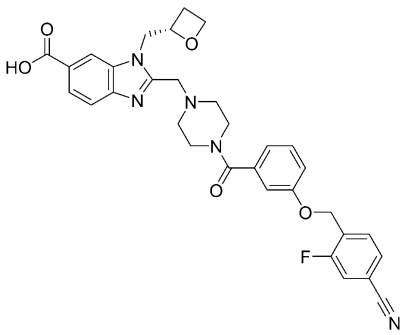
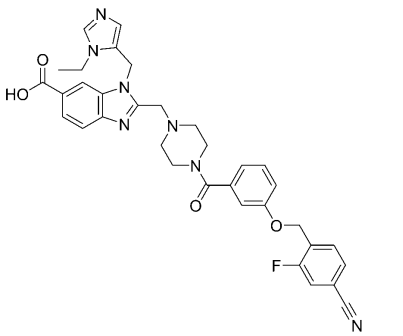
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【表 1 - 1 2】

化合物	構造
64	
65	
66	
67	

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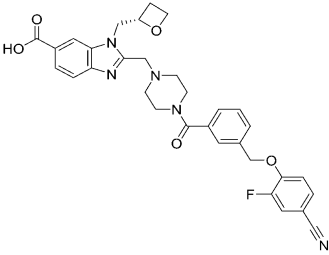
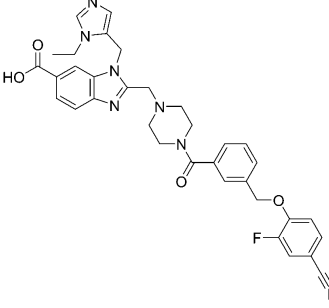
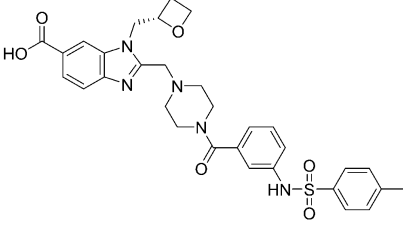
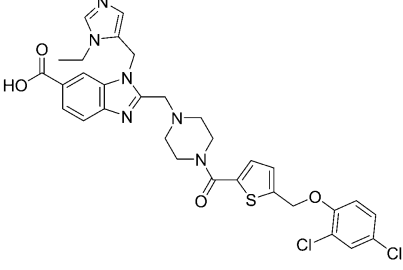
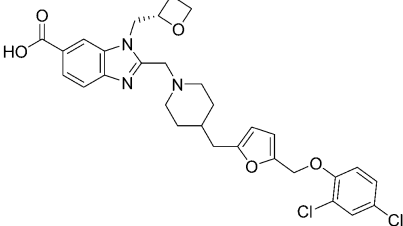
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【表 1 - 1 3】

化合物	構造
68	
69	
70	
71	
72	

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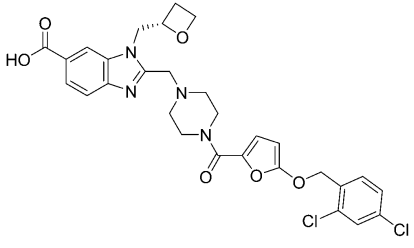
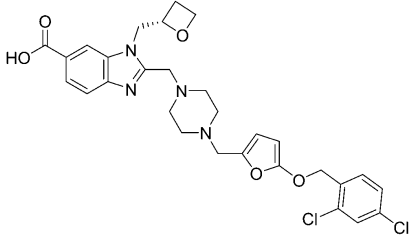
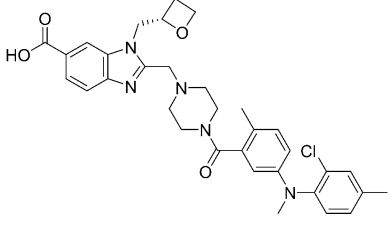
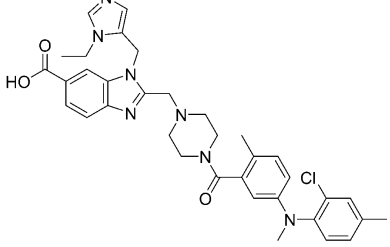
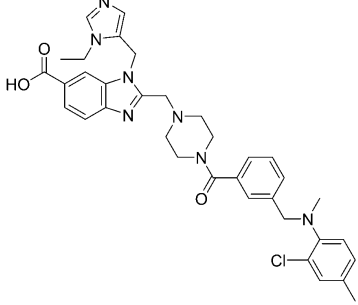
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【表 1 - 1 4】

化合物	構造
73	
74	
75	
76	
77	

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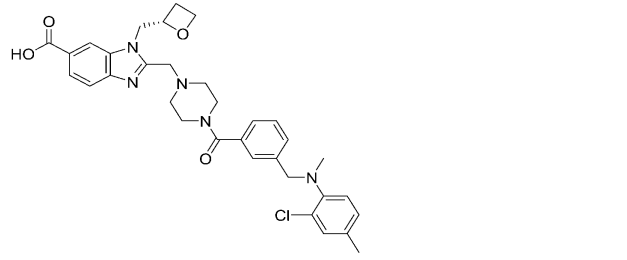
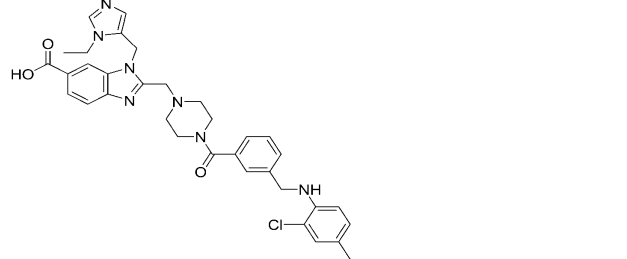
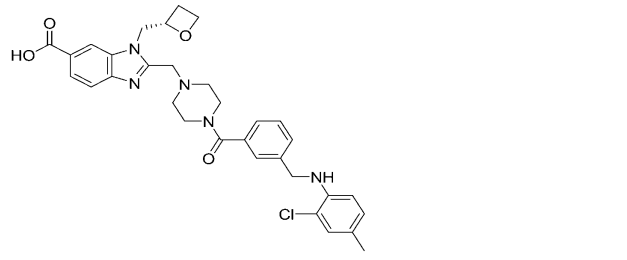
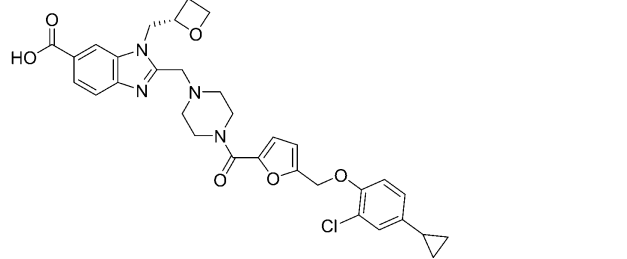
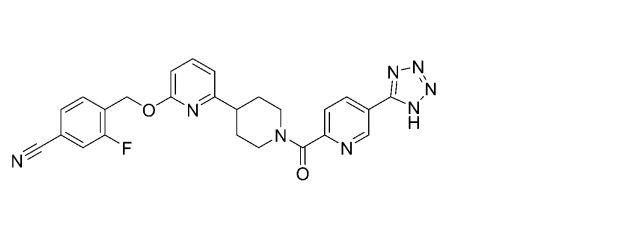
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【表 1 - 15】

化合物	構造
78	
79	
80	
81	
82	

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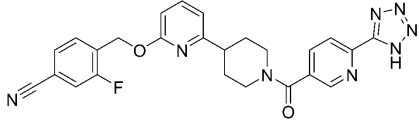
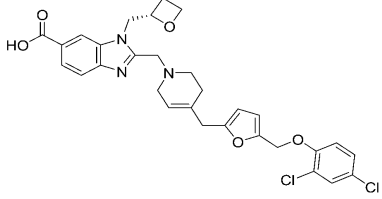
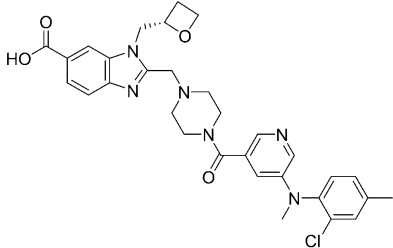
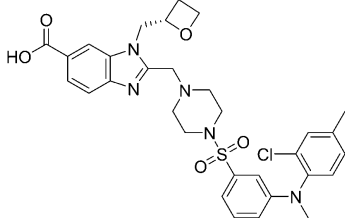
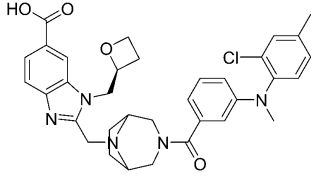
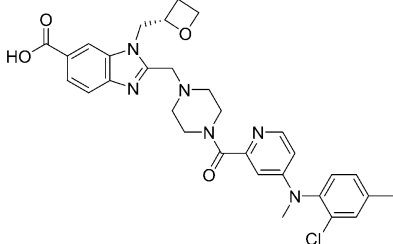
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【表 1 - 16】

化合物	構造
83	
84	
85	
86	
87	
88	

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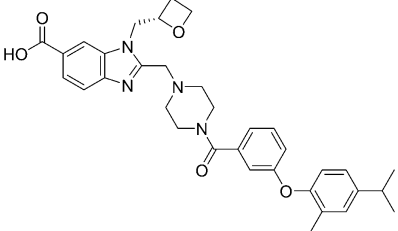
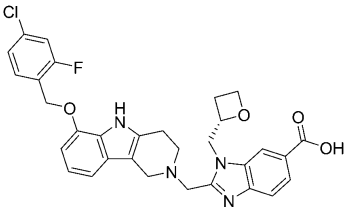
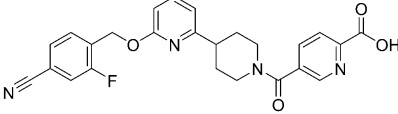
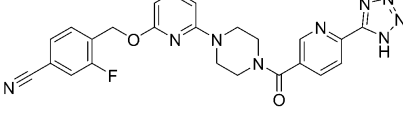
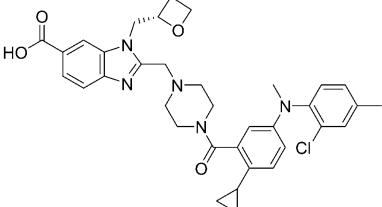
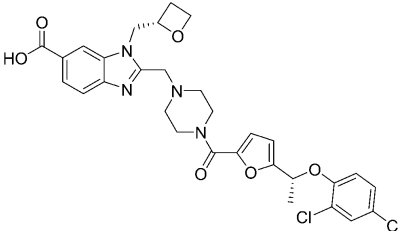
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【表 1 - 17】

化合物	構造
89	
90	
91	
92	
93	
94	

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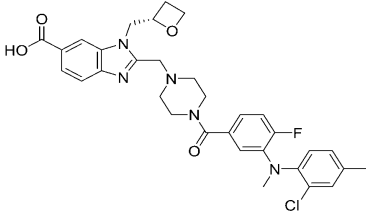
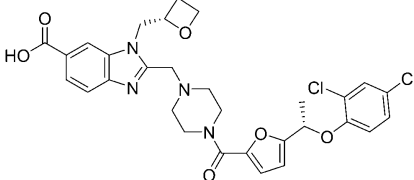
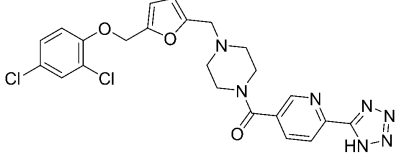
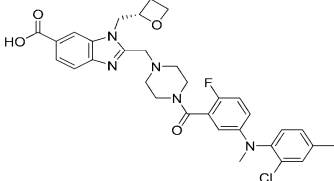
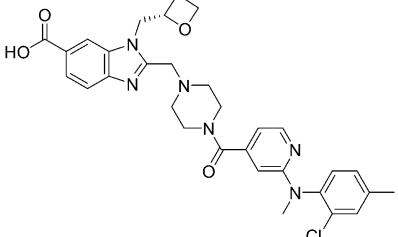
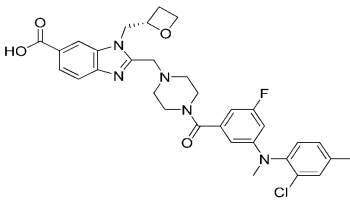
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【表 1 - 18】

化合物	構造
95	
96	
97	
98	
99	
100	

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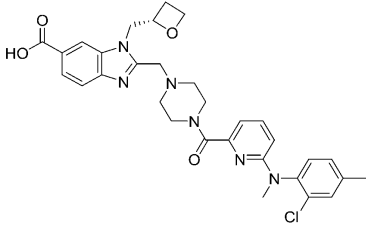
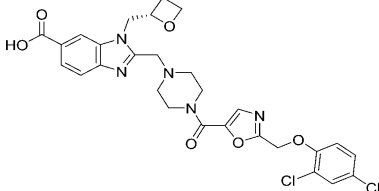
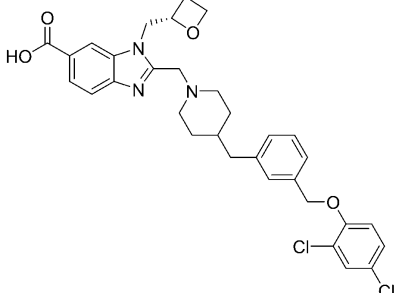
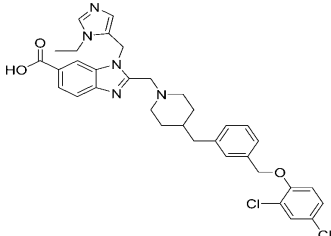
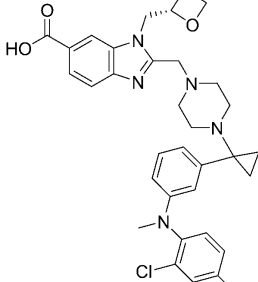
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【表 1 - 19】

化合物	構造
101	
102	
103	
104	
105	

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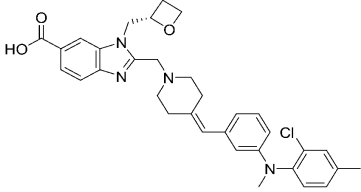
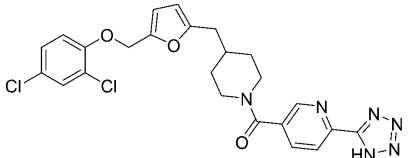
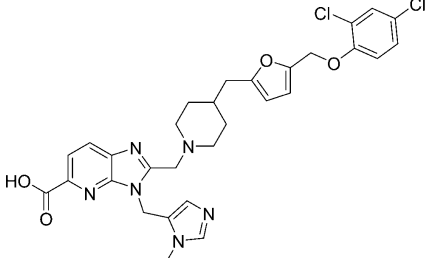
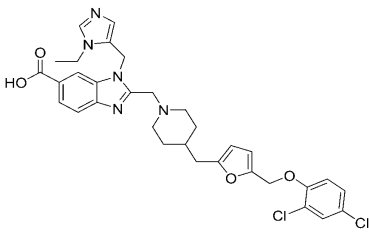
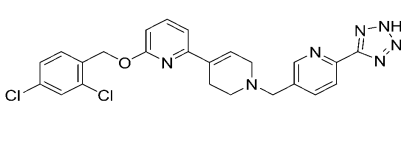
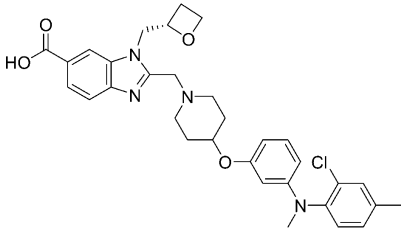
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【表 1 - 20】

化合物	構造
106	
107	
108	
109	
110	
111	

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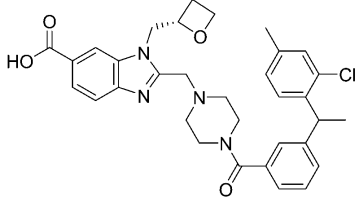
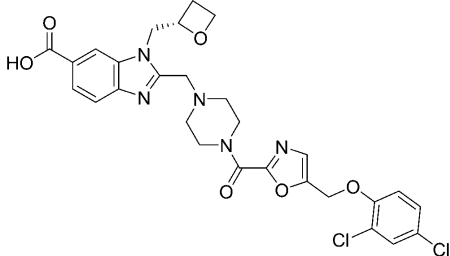
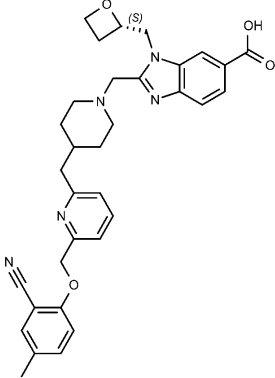
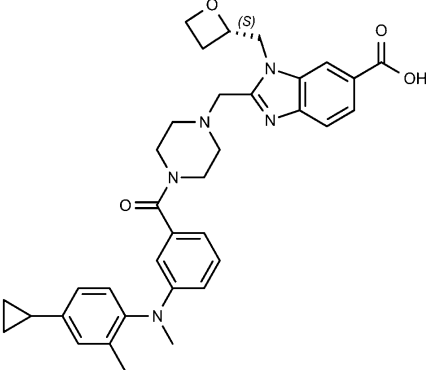
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【表 1 - 2 1】

化合物	構造
112	
113	
114	
115	

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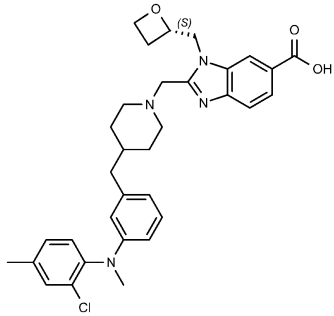
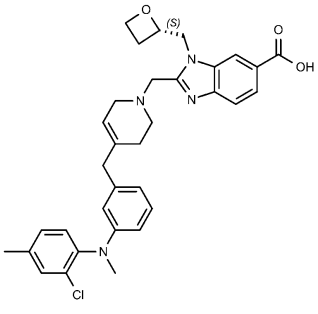
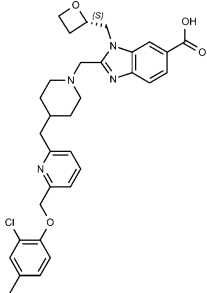
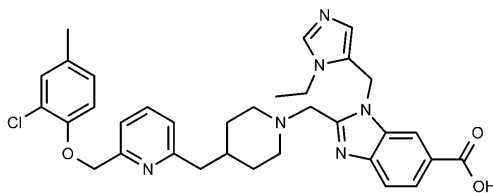
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【表 1 - 2 2】

化合物	構造
116	
117	
118	
120	

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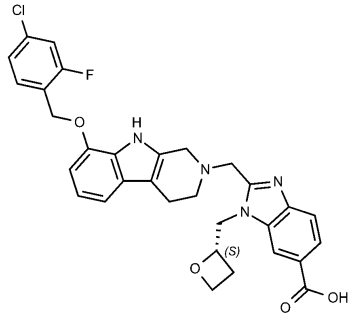
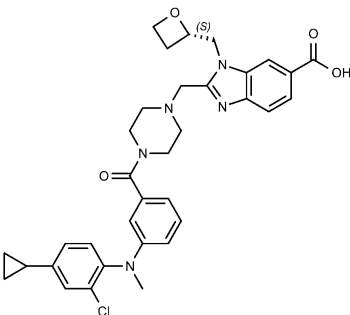
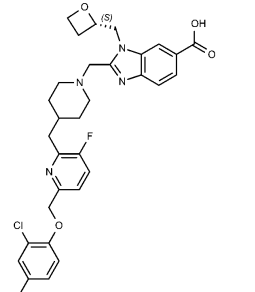
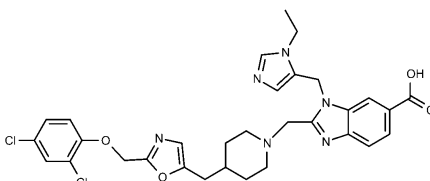
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【表 1 - 2 3】

化合物	構造
121	
122	
123	
124	

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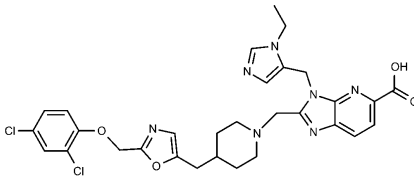
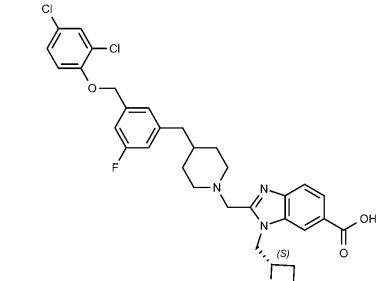
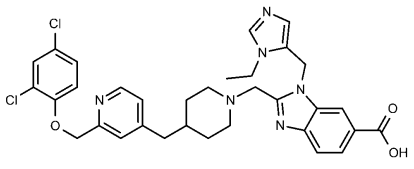
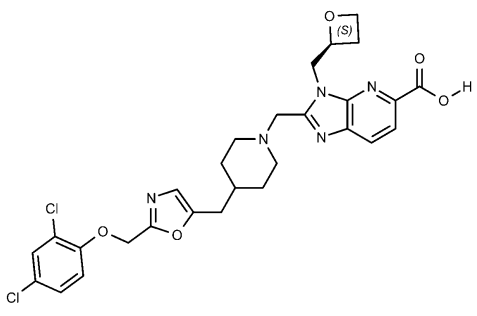
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【表 1 - 2 4】

化合物	構造
125	
126	
128	
129	

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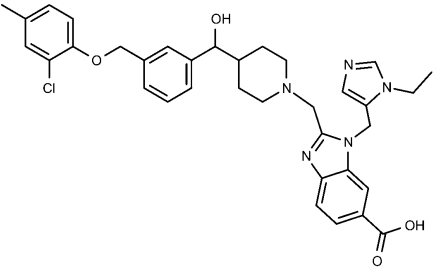
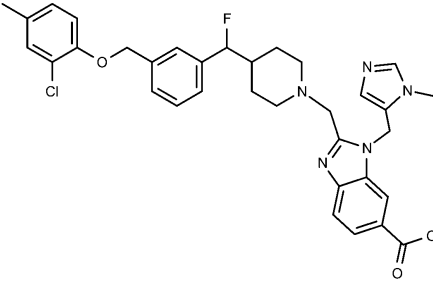
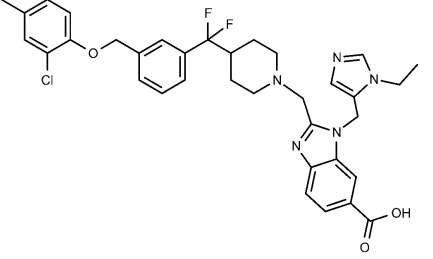
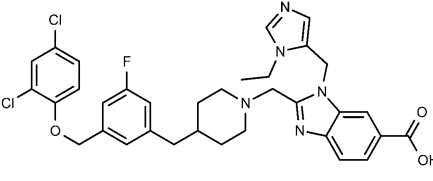
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【表 1 - 2 5】

化合物	構造
130	
131	
132	
133	

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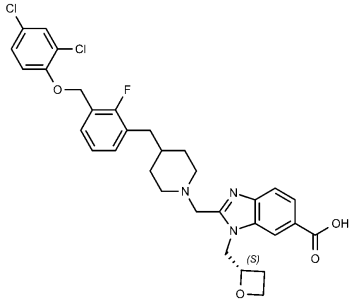
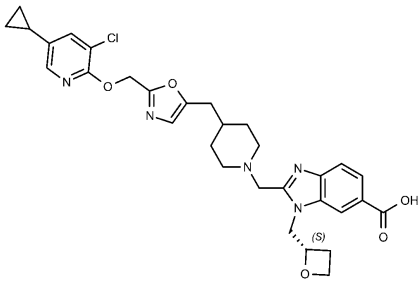
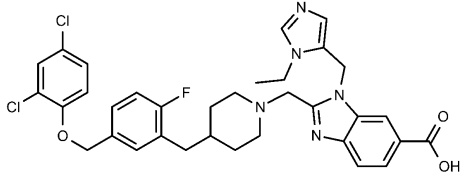
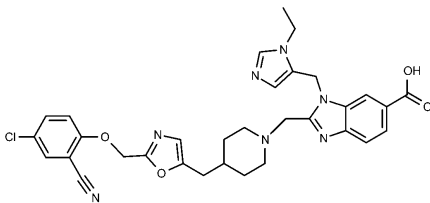
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【表 1 - 2 6】

化合物	構造
135	
136	
137	
138	

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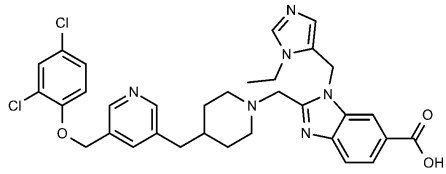
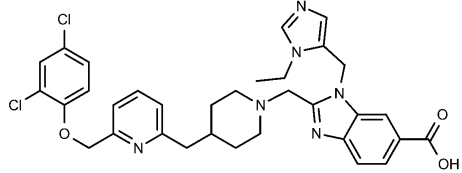
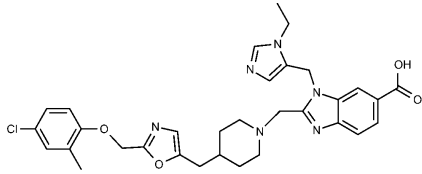
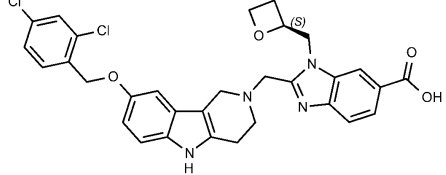
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【表 1 - 27】

化合物	構造
139	
140	
141	
142	

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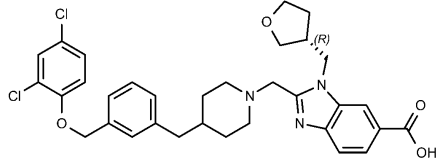
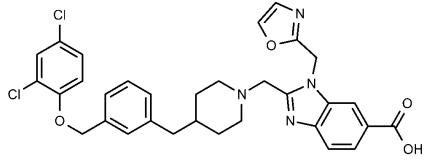
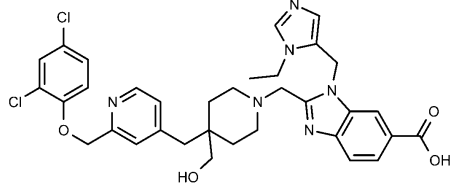
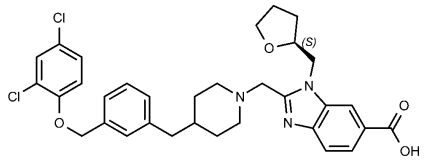
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【表 1 - 2 9】

化合物	構造
148	
149	
150	
151	

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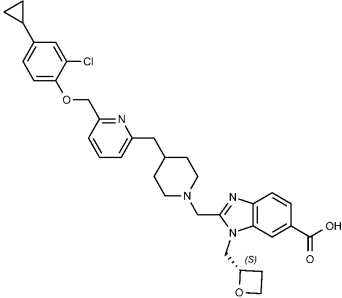
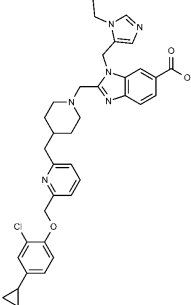
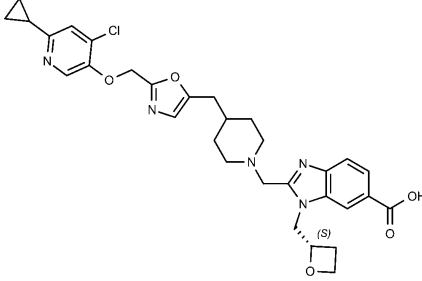
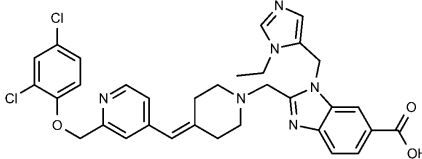
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【表 1 - 3 0】

化合物	構造
152	
153	
154	
155	

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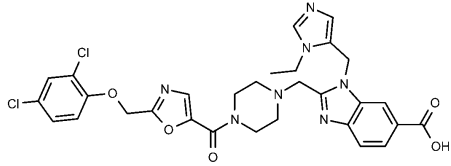
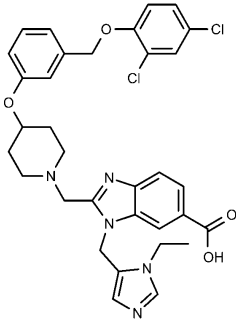
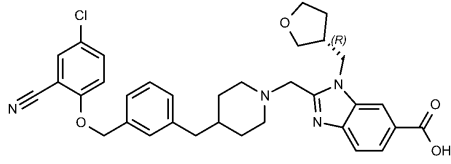
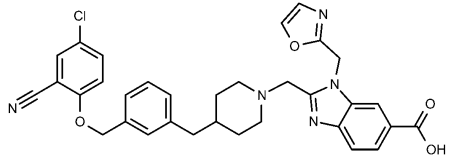
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【表 1 - 3 1】

化合物	構造
156	
157	
158	
159	

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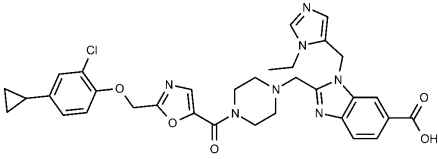
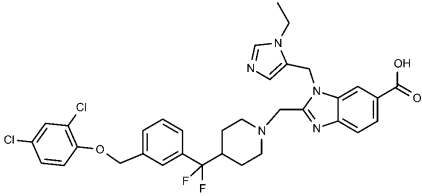
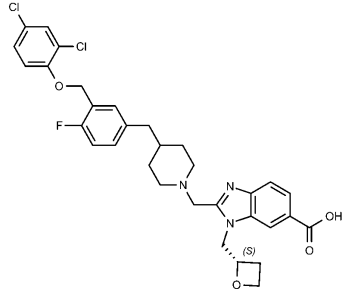
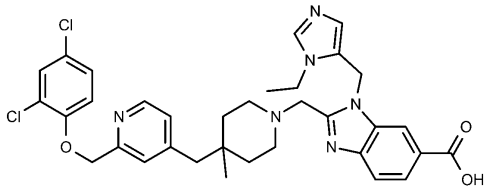
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【表 1 - 3 2】

化合物	構造
160	
161	
162	
163	

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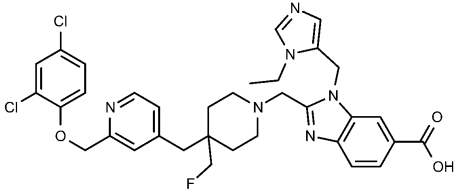
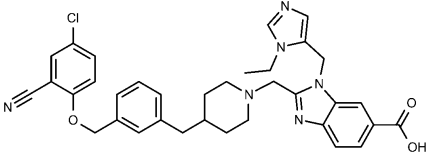
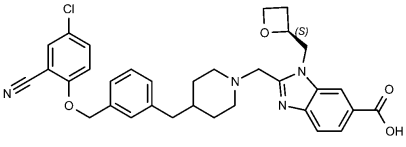
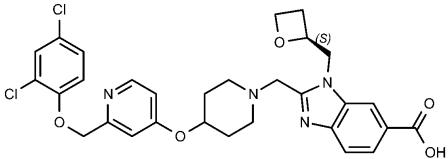
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【表 1 - 3 3】

化合物	構造
164	
165	
166	
168	

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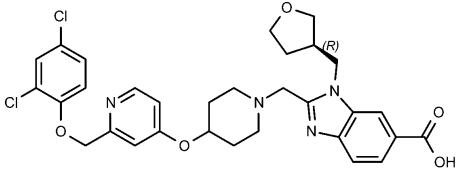
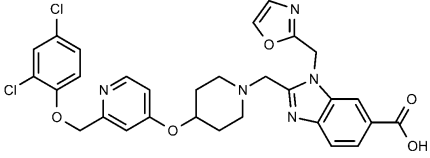
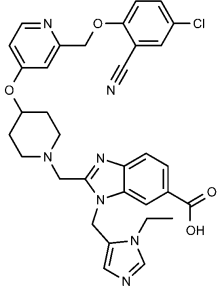
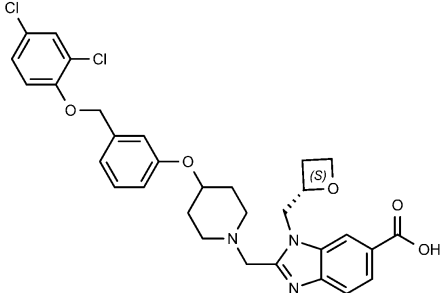
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【表 1 - 3 4】

化合物	構造
169	
170	
171	
174	

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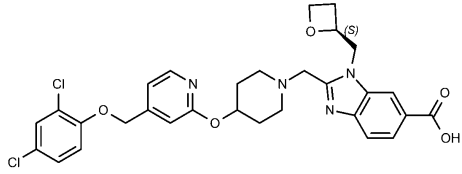
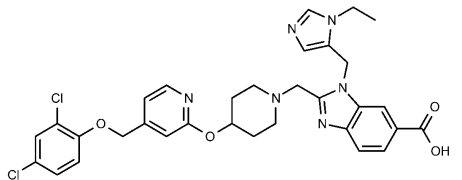
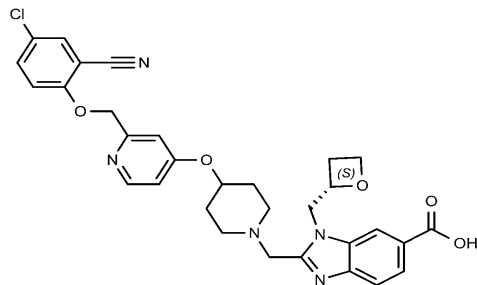
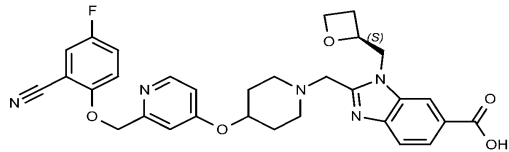
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【表 1 - 3 5】

化合物	構造
178	
179	
182	
183	

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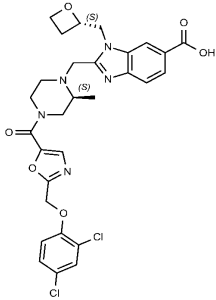
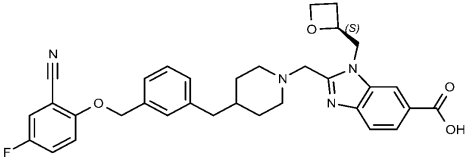
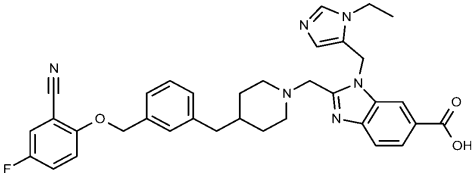
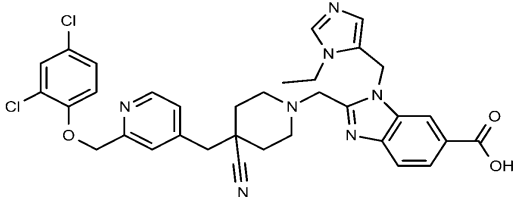
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【表 1 - 3 6】

化合物	構造
186	
187	
188	
189	

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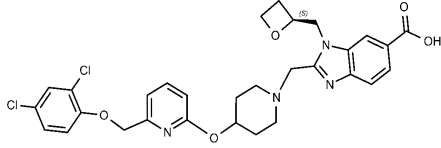
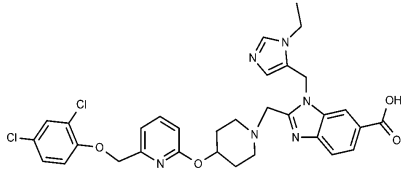
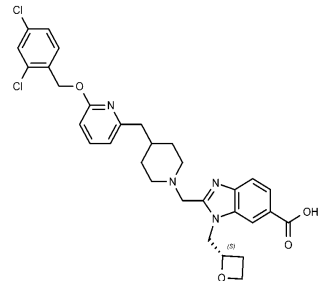
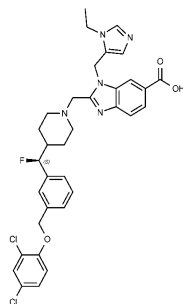
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【表 1 - 3 7】

化合物	構造
198	
199	
200	
202	

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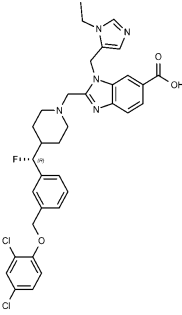
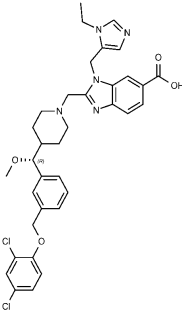
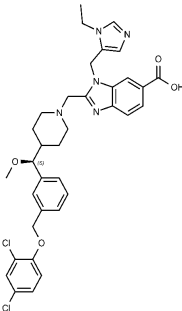
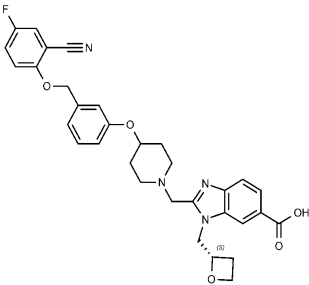
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【表 1 - 3 8】

化合物	構造
203	
204	
205	
206	

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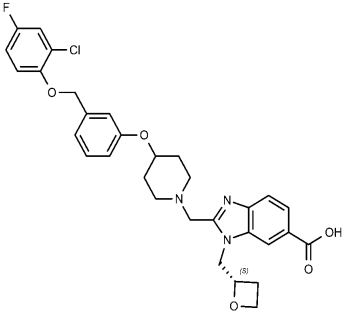
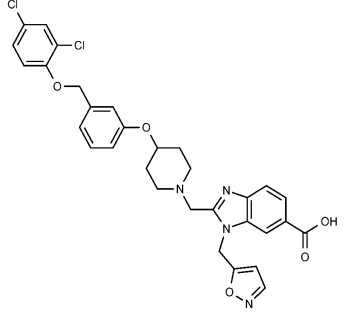
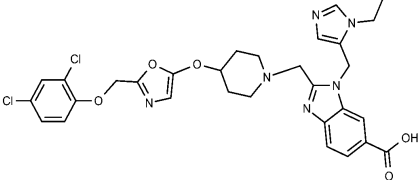
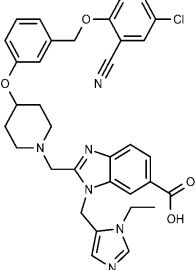
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【表 1 - 3 9】

化合物	構造
207	
208	
214	
215	

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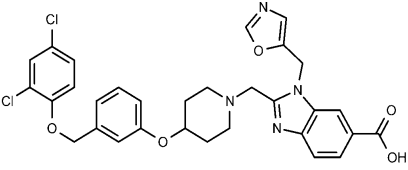
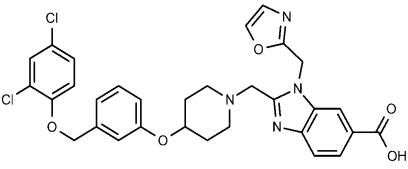
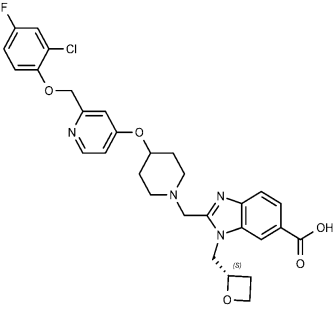
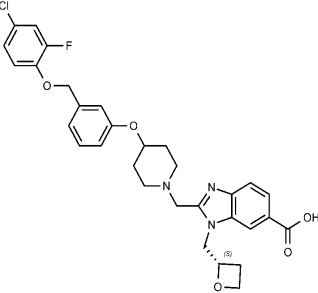
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【表 1 - 40】

化合物	構造
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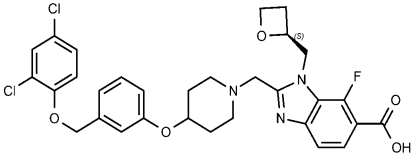
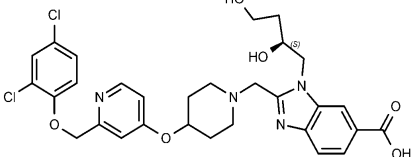
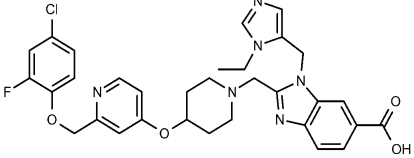
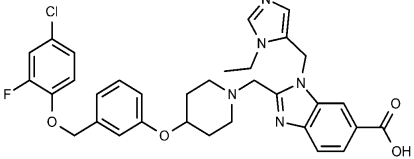
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【表 1 - 4 1】

化合物	構造
224	 <p>Chemical structure of compound 224: A piperidine ring is connected via an oxygen atom to a 4-chlorophenyl ring. This phenyl ring is further connected via an oxygen atom to a pyridine ring. The pyridine ring is linked to a piperazine ring, which is connected to a benzimidazole ring system. The benzimidazole ring has a fluorine atom and a carboxylic acid group. A 2-oxetanyl group is attached to the benzimidazole ring.</p>
227	 <p>Chemical structure of compound 227: A piperidine ring is connected via an oxygen atom to a 2,4-dichlorophenyl ring. This phenyl ring is further connected via an oxygen atom to a pyridine ring. The pyridine ring is linked to a piperazine ring, which is connected to a benzimidazole ring system. The benzimidazole ring has a carboxylic acid group. A 2-hydroxyethyl group is attached to the benzimidazole ring.</p>
230	 <p>Chemical structure of compound 230: A piperidine ring is connected via an oxygen atom to a 2-chloro-4-fluorophenyl ring. This phenyl ring is further connected via an oxygen atom to a pyridine ring. The pyridine ring is linked to a piperazine ring, which is connected to a benzimidazole ring system. The benzimidazole ring has a methyl group and a carboxylic acid group.</p>
231	 <p>Chemical structure of compound 231: A piperidine ring is connected via an oxygen atom to a 2-chloro-4-fluorophenyl ring. This phenyl ring is further connected via an oxygen atom to a pyridine ring. The pyridine ring is linked to a piperazine ring, which is connected to a benzimidazole ring system. The benzimidazole ring has a methyl group and a carboxylic acid group.</p>

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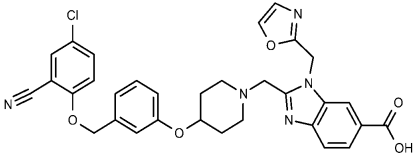
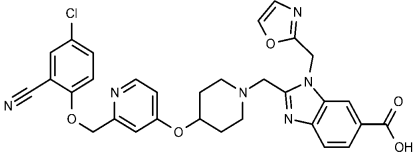
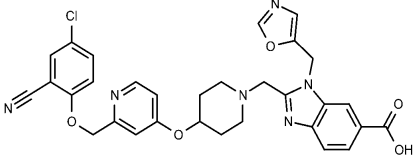
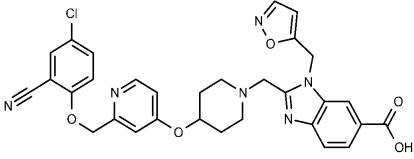
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【表 1 - 4 2】

化合物	構造
232	 <p>Chemical structure of compound 232: A central piperidine ring is connected via an oxygen atom to a benzene ring. This benzene ring is further connected to another benzene ring that has a cyano group (-C≡N) and a chlorine atom (-Cl) at the 3 and 4 positions, respectively. The piperidine ring is also connected via its nitrogen atom to a methylene group (-CH2-), which is in turn connected to a 1,2,4-triazole ring. The triazole ring is substituted with a methyl group (-CH3) and a carboxylic acid group (-COOH).</p>
239	 <p>Chemical structure of compound 239: Similar to compound 232, but the benzene ring connected to the piperidine ring is substituted with a nitrogen atom at the 2-position, forming a pyridine ring.</p>
240	 <p>Chemical structure of compound 240: Similar to compound 239, but the pyridine ring is substituted with a nitrogen atom at the 4-position, forming a pyrimidine ring.</p>
241	 <p>Chemical structure of compound 241: Similar to compound 239, but the pyridine ring is substituted with a nitrogen atom at the 3-position, forming a pyridine ring.</p>

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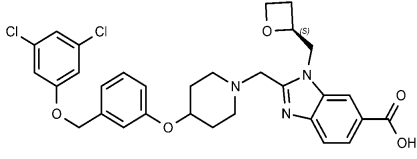
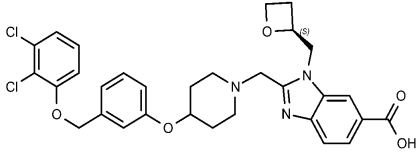
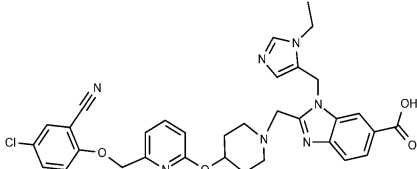
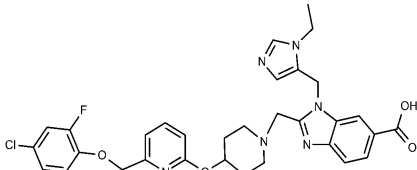
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【表 1 - 4 3】

化合物	構造
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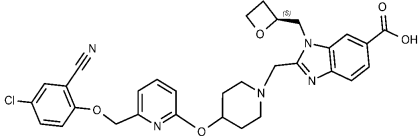
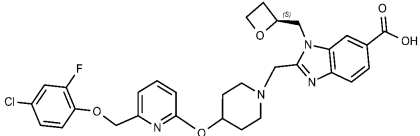
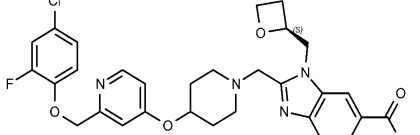
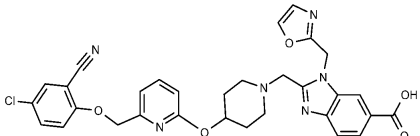
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【表 1 - 4 4】

化合物	構造
248	 <p>Chemical structure of compound 248: A complex molecule featuring a central piperidine ring. One nitrogen of the piperidine is connected via a methylene group to the 2-position of a pyridine ring. The 4-position of this pyridine ring is linked via a methylene group to the 5-position of a 2-cyano-4-chlorophenyl ring. The other nitrogen of the piperidine ring is connected via a methylene group to the 1-position of an imidazole ring. The 4-position of this imidazole ring is linked via a methylene group to the 5-position of a 2-carboxyphenyl ring. A tetrahydrofuran ring is attached to the 2-position of the imidazole ring.</p>
249	 <p>Chemical structure of compound 249: Similar to compound 248, but the 2-cyano-4-chlorophenyl group is replaced by a 2-fluoro-4-chlorophenyl group.</p>
250	 <p>Chemical structure of compound 250: Similar to compound 248, but the 2-cyano-4-chlorophenyl group is replaced by a 2-fluoro-4-chlorophenyl group, and the pyridine ring is connected to the 3-position of the imidazole ring.</p>
251	 <p>Chemical structure of compound 251: Similar to compound 248, but the tetrahydrofuran ring is replaced by a 1,2,4-oxadiazole ring.</p>

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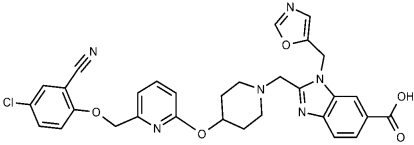
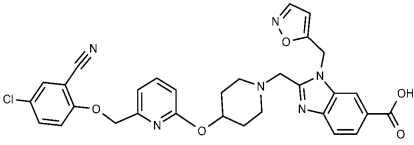
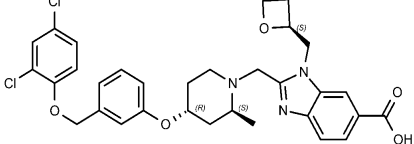
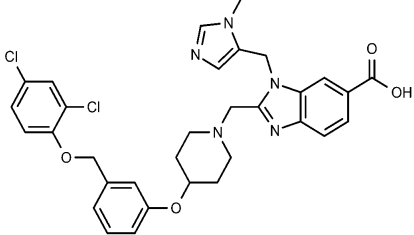
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【表 1 - 4 5】

化合物	構造
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254	
255	

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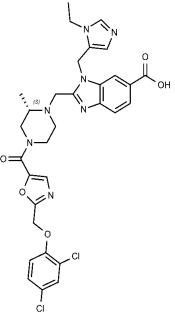
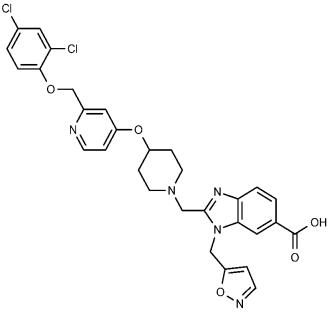
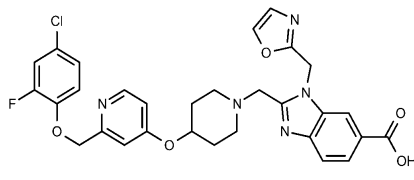
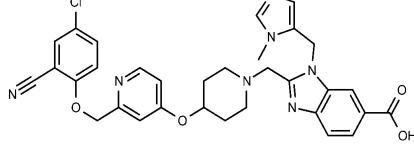
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【表 1 - 4 6】

化合物	構造
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258	
259	

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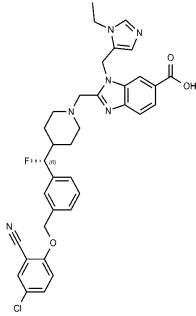
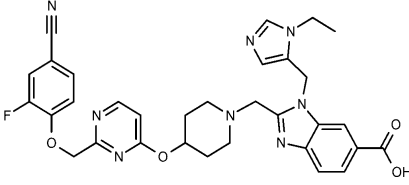
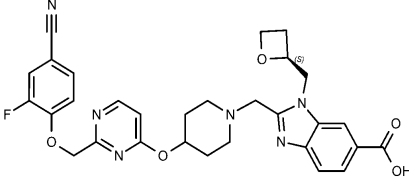
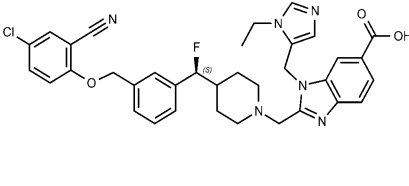
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【表 1 - 4 7】

化合物	構造
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262	
263	

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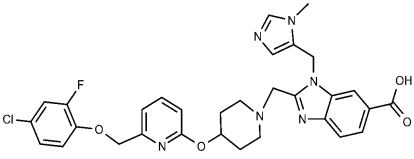
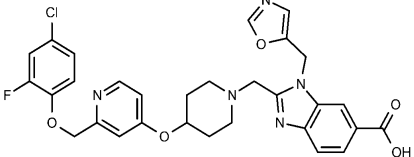
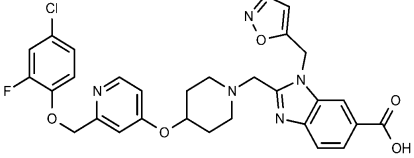
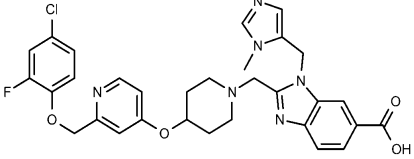
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【表 1 - 4 8】

化合物	構造
264	 <p>Chemical structure of compound 264: A complex molecule featuring a central piperazine ring. One nitrogen of the piperazine is connected via an oxygen atom to a pyridine ring. The other nitrogen of the piperazine is connected via a methylene group to a benzimidazole ring. The pyridine ring is further substituted with a methylene group linked to a 2,4-difluoro-5-chlorophenyl ring. The benzimidazole ring is substituted with a methyl group on one nitrogen and a 4-carboxyphenyl group on the other.</p>
265	 <p>Chemical structure of compound 265: Similar to compound 264, but the benzimidazole ring is substituted with a methyl group on one nitrogen and a 4-isoxazol-5-ylmethyl group on the other.</p>
266	 <p>Chemical structure of compound 266: Similar to compound 265, but the benzimidazole ring is substituted with a methyl group on one nitrogen and a 4-isoxazol-5-ylmethyl group on the other, with a different orientation of the substituents compared to 265.</p>
267	 <p>Chemical structure of compound 267: Similar to compound 265, but the benzimidazole ring is substituted with a methyl group on one nitrogen and a 4-isoxazol-5-ylmethyl group on the other, with a different orientation of the substituents compared to 265.</p>

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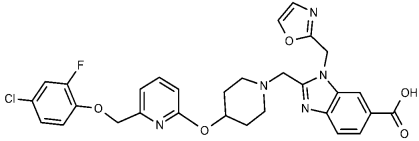
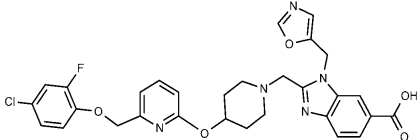
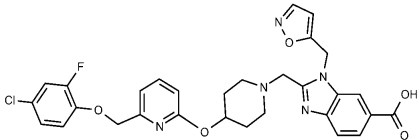
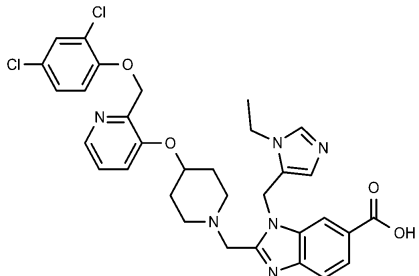
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【表 1 - 4 9】

化合物	構造
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270	
271	

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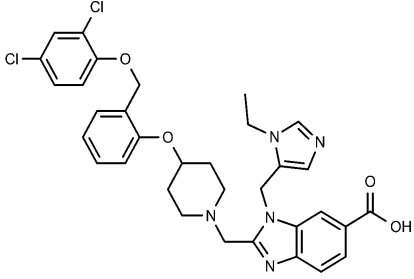
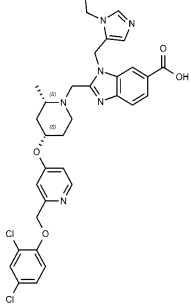
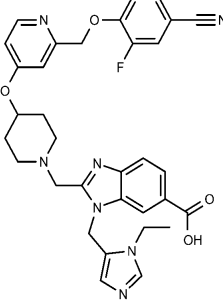
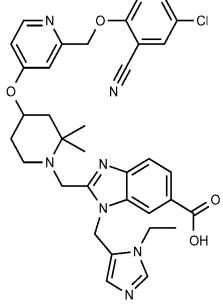
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【表 1 - 5 0】

化合物	構造
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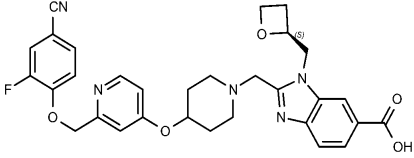
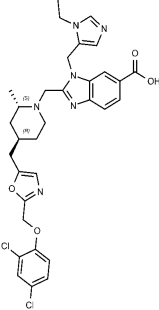
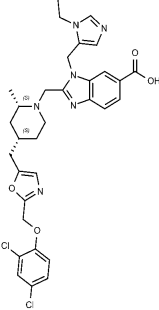
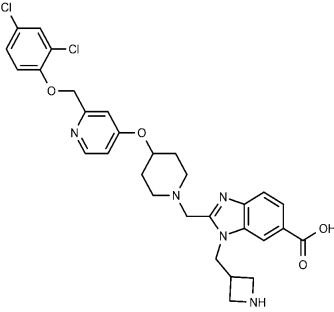
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【表 1 - 5 1】

化合物	構造
277	 <p>Chemical structure of compound 277: A central piperazine ring is substituted at the 1-position with a 4-cyano-2-fluorophenoxy group and at the 4-position with a 1-(4-carboxyphenyl)-1H-imidazole-2-ylmethyl group. The imidazole ring is further substituted at the 2-position with a 2-oxetanyl group.</p>
278	 <p>Chemical structure of compound 278: A central piperazine ring is substituted at the 1-position with a 1-(4-carboxyphenyl)-1H-imidazole-2-ylmethyl group and at the 4-position with a 2-(3,4-dichlorophenoxy)imidazole-5-ylmethyl group. The imidazole ring is further substituted at the 2-position with a 1-methyl-1H-imidazole-2-ylmethyl group.</p>
279	 <p>Chemical structure of compound 279: A central piperazine ring is substituted at the 1-position with a 1-(4-carboxyphenyl)-1H-imidazole-2-ylmethyl group and at the 4-position with a 2-(3,4-dichlorophenoxy)imidazole-5-ylmethyl group. The imidazole ring is further substituted at the 2-position with a 1-methyl-1H-imidazole-2-ylmethyl group.</p>
280	 <p>Chemical structure of compound 280: A central piperazine ring is substituted at the 1-position with a 1-(4-carboxyphenyl)-1H-imidazole-2-ylmethyl group and at the 4-position with a 2-(3,4-dichlorophenoxy)imidazole-5-ylmethyl group. The imidazole ring is further substituted at the 2-position with a 1-methyl-1H-imidazole-2-ylmethyl group.</p>

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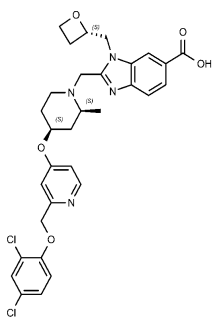
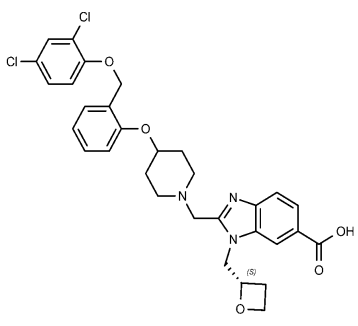
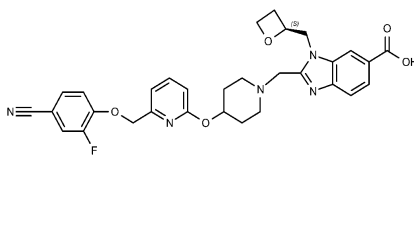
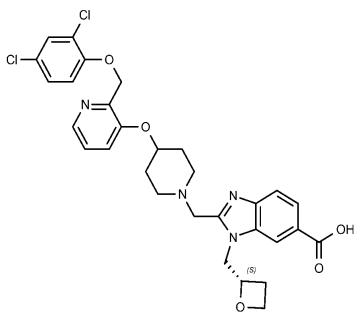
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【表 1 - 5 2】

化合物	構造
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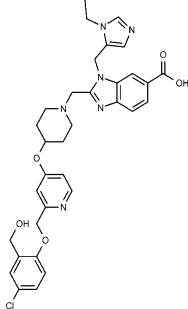
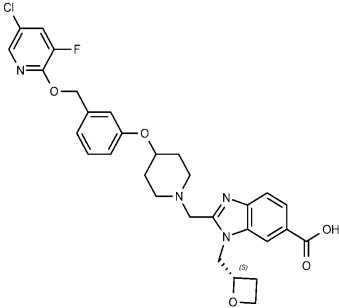
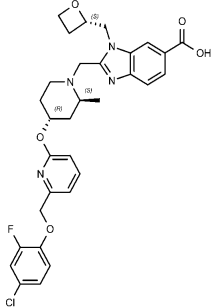
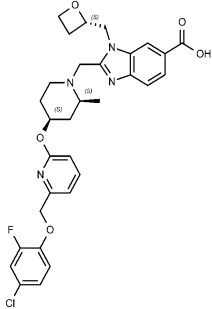
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【表 1 - 5 3】

化合物	構造
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【表 1 - 5 4】

化合物	構造
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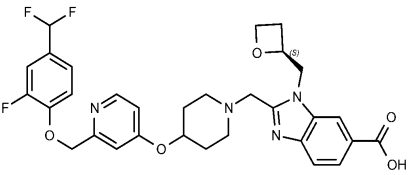
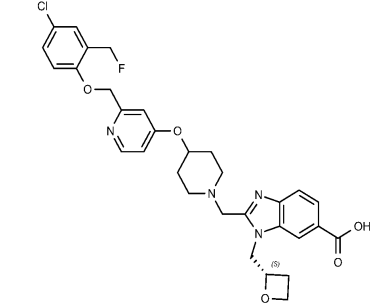
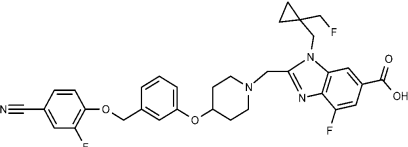
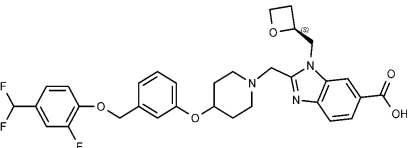
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【表 1 - 5 5】

化合物	構造
297	 <p>Chemical structure of compound 297: A central piperazine ring is connected via its nitrogen atoms to a 2,4-difluorophenyl group (via a methylene bridge) and a 2,6-difluorophenyl group (via a methylene bridge). The piperazine ring is also connected to a 1,2,4-triazole ring, which is further substituted with a carboxylic acid group and a tetrahydrofuran ring.</p>
299	 <p>Chemical structure of compound 299: A central piperazine ring is connected via its nitrogen atoms to a 2-chloro-4-fluorophenyl group (via a methylene bridge) and a 1,2,4-triazole ring. The triazole ring is further substituted with a carboxylic acid group and a tetrahydrofuran ring.</p>
300	 <p>Chemical structure of compound 300: A central piperazine ring is connected via its nitrogen atoms to a 2-cyano-4-fluorophenyl group (via a methylene bridge) and a 1,2,4-triazole ring. The triazole ring is further substituted with a carboxylic acid group and a fluorine atom.</p>
301	 <p>Chemical structure of compound 301: A central piperazine ring is connected via its nitrogen atoms to a 2,4,6-trifluorophenyl group (via a methylene bridge) and a 1,2,4-triazole ring. The triazole ring is further substituted with a carboxylic acid group and a tetrahydrofuran ring.</p>

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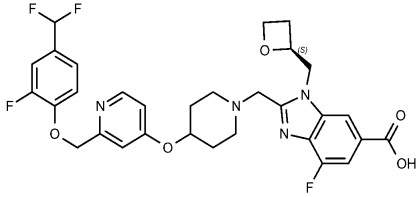
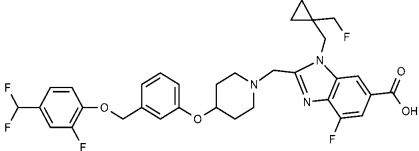
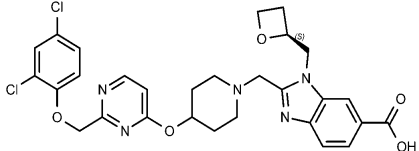
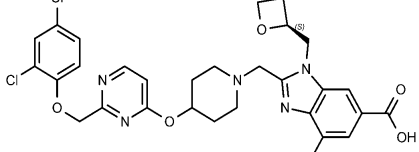
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【表 1 - 5 6】

化合物	構造
302	 <p>Chemical structure of compound 302: A central piperazine ring is connected via oxygen atoms to two pyridine rings. The left pyridine ring has a difluoromethyl group and a fluorine atom. The right pyridine ring is substituted with a 2-oxetanyl group and a 2-fluorophenyl group. The 2-fluorophenyl group is further substituted with a carboxylic acid group.</p>
303	 <p>Chemical structure of compound 303: A central piperazine ring is connected via oxygen atoms to two pyridine rings. The left pyridine ring has a difluoromethyl group and a fluorine atom. The right pyridine ring is substituted with a 2-(2-fluorophenyl)ethyl group and a carboxylic acid group.</p>
304	 <p>Chemical structure of compound 304: A central piperazine ring is connected via oxygen atoms to two pyridine rings. The left pyridine ring has a 2,4-dichlorophenyl group and a fluorine atom. The right pyridine ring is substituted with a 2-oxetanyl group and a 2-fluorophenyl group. The 2-fluorophenyl group is further substituted with a carboxylic acid group.</p>
305	 <p>Chemical structure of compound 305: A central piperazine ring is connected via oxygen atoms to two pyridine rings. The left pyridine ring has a 2,4-dichlorophenyl group and a fluorine atom. The right pyridine ring is substituted with a 2-oxetanyl group and a 2-fluorophenyl group. The 2-fluorophenyl group is further substituted with a carboxylic acid group.</p>

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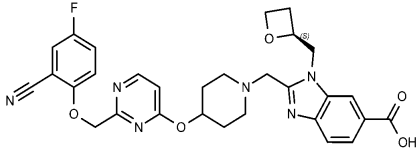
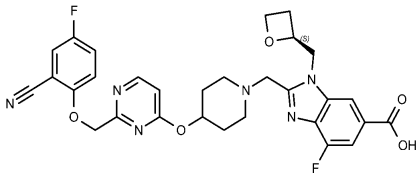
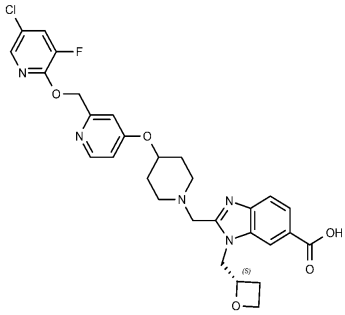
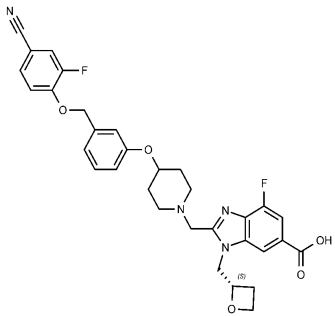
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【表 1 - 5 7】

化合物	構造
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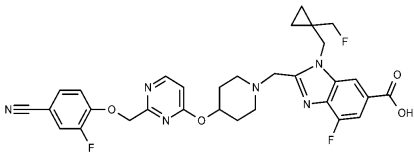
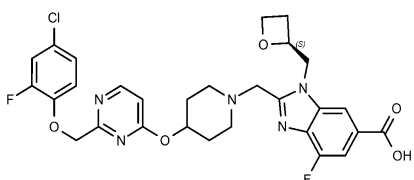
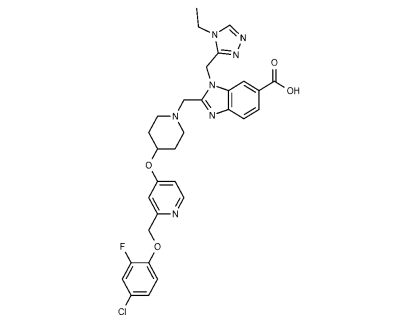
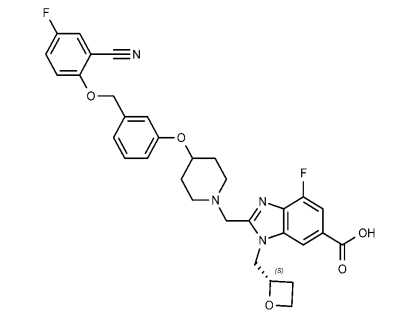
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【表 1 - 5 9】

化合物	構造
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317	

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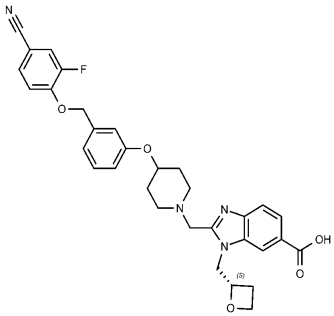
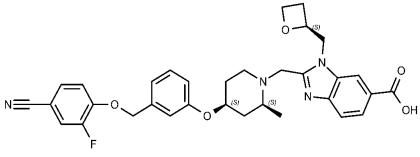
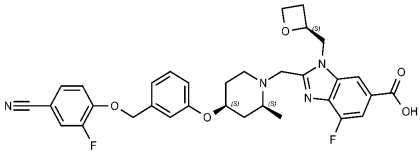
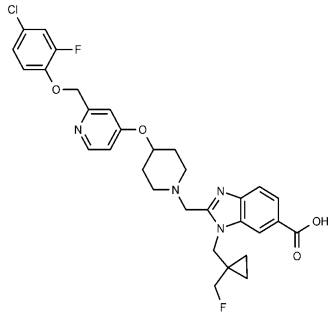
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【表 1 - 60】

化合物	構造
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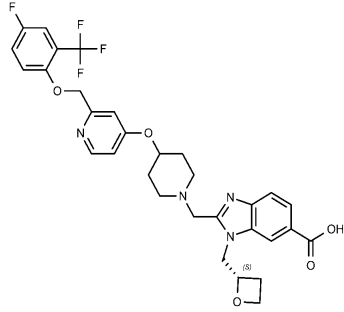
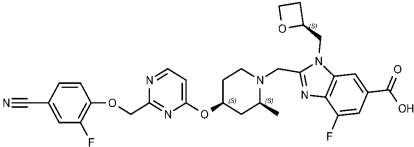
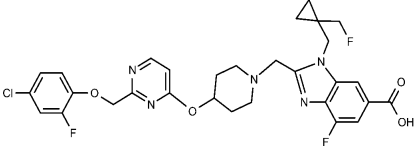
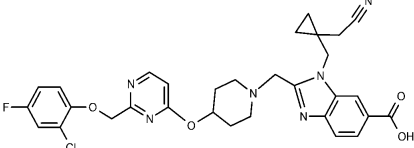
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【表 1 - 6 1】

化合物	構造
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325	

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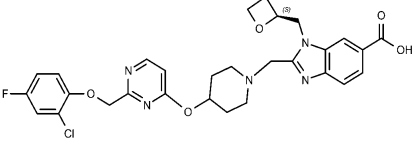
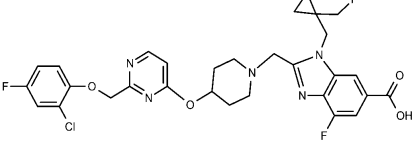
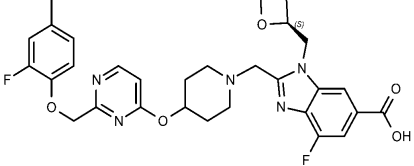
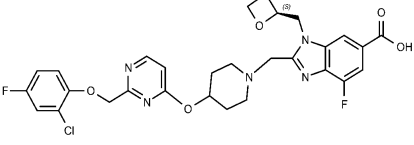
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【表 1 - 6 2】

化合物	構造
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328	
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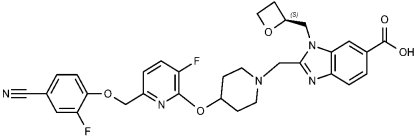
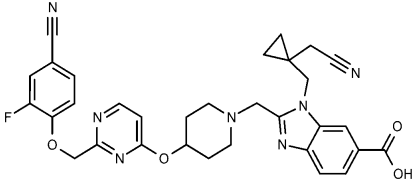
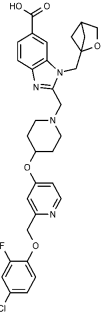
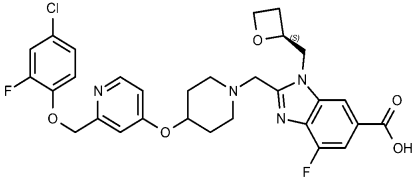
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【表 1 - 6 3】

化合物	構造
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333	
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【表 1 - 6 4】

化合物	構造
336	
337	
338	
339	

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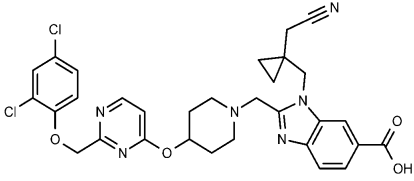
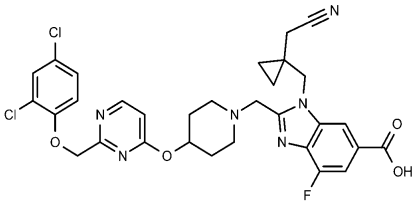
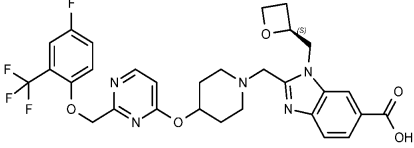
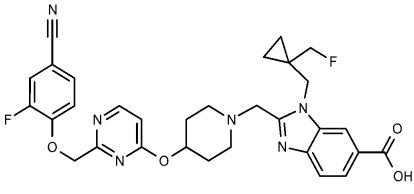
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【表 1 - 6 5】

化合物	構造
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342	
343	

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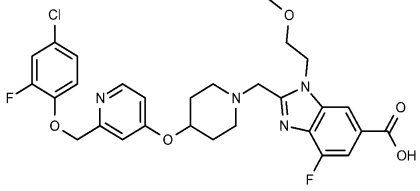
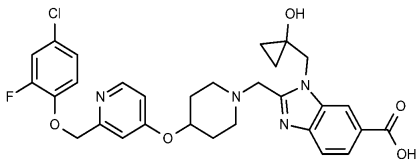
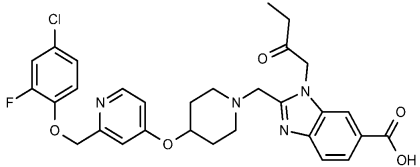
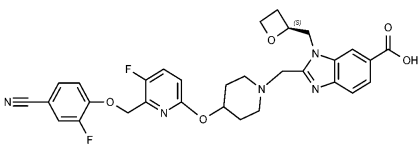
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【表 1 - 6 6】

化合物	構造
344	
345	
346	
347	

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【表 1 - 6 7】

化合物	構造
348	
349	
352	
353	

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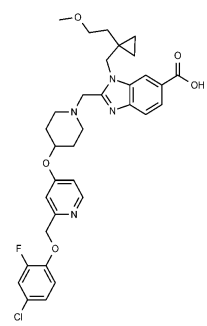
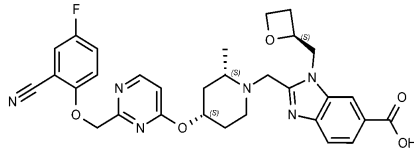
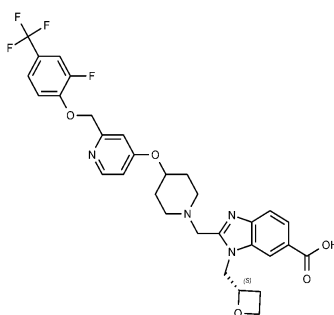
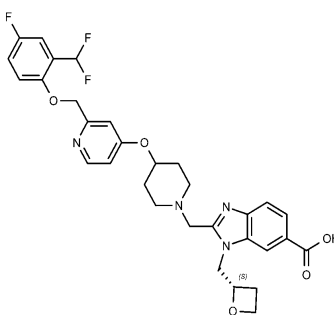
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【表 1 - 6 8】

化合物	構造
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355	
356	
357	

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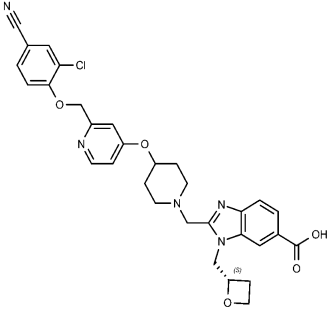
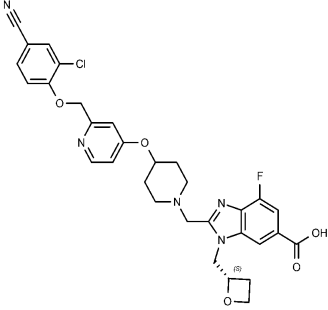
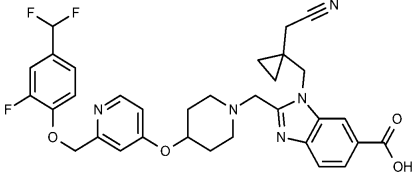
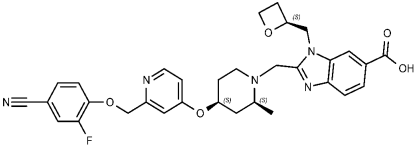
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【表 1 - 6 9】

化合物	構造
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362	
363	

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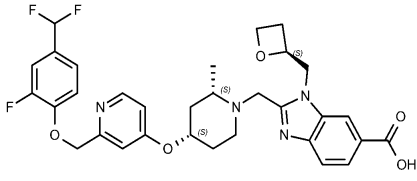
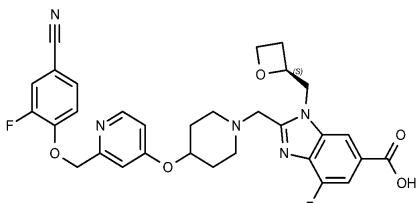
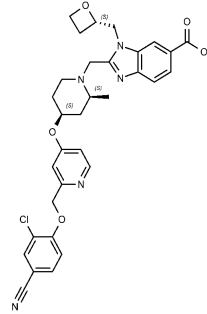
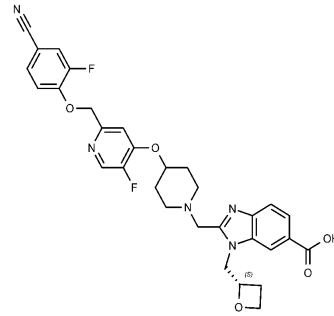
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【表 1 - 70】

化合物	構造
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365	
366	
367	

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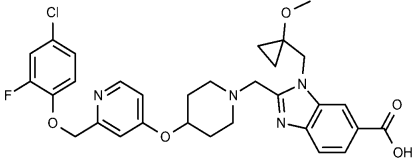
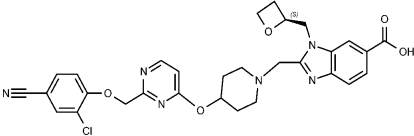
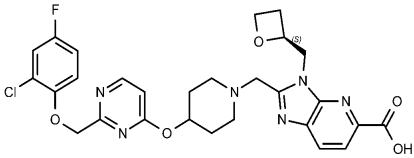
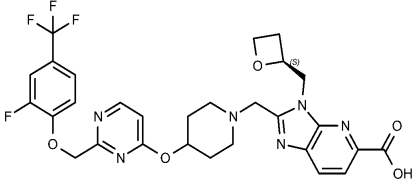
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【表 1 - 7 1】

化合物	構造
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369	
370	
371	

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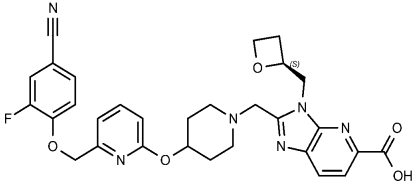
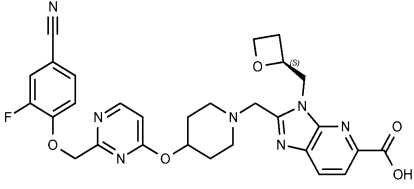
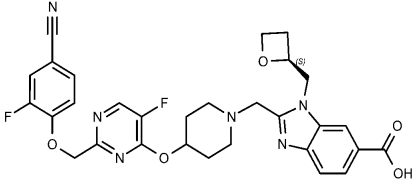
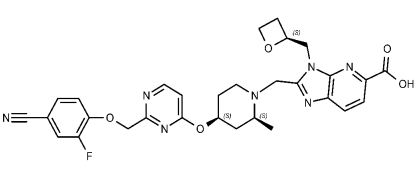
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【表 1 - 7 2】

化合物	構造
372	 <p>Chemical structure of compound 372: A complex molecule featuring a central piperidine ring. One nitrogen of the piperidine is connected via an oxygen atom to a pyridine ring. The pyridine ring has a methoxy group and a cyano group. The other nitrogen of the piperidine is connected via a methylene group to a nitrogen atom in a fused bicyclic system (indazole-like). This nitrogen also has a carboxylic acid group and a tetrahydrofuran ring attached. Stereochemistry is indicated with wedges and dashes.</p>
373	 <p>Chemical structure of compound 373: Similar to 372, but the pyridine ring is replaced by a pyrimidine ring. The cyano group is at the 4-position and the methoxy group is at the 2-position of the pyrimidine.</p>
374	 <p>Chemical structure of compound 374: Similar to 372, but the pyridine ring is replaced by a pyrimidine ring with a fluorine atom at the 6-position. The cyano group is at the 4-position and the methoxy group is at the 2-position of the pyrimidine.</p>
375	 <p>Chemical structure of compound 375: Similar to 372, but the pyridine ring is replaced by a pyrimidine ring with a cyano group at the 4-position and a fluorine atom at the 2-position.</p>

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【表 1 - 7 3】

化合物	構造
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378	
379	
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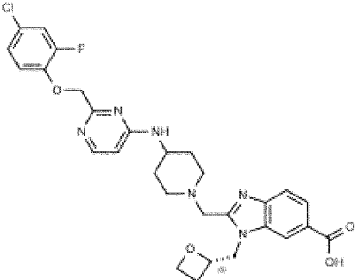
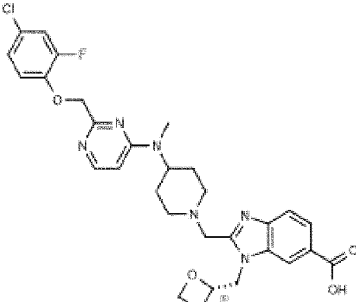
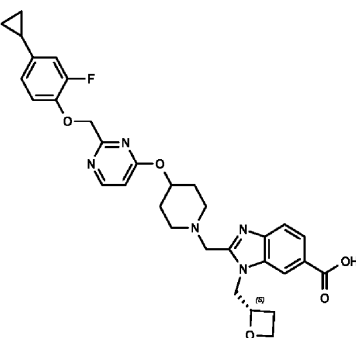
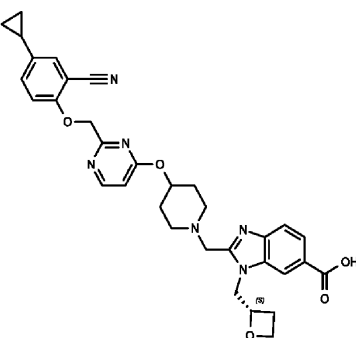
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【表 1 - 7 4】

化合物	構造
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382	
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476	

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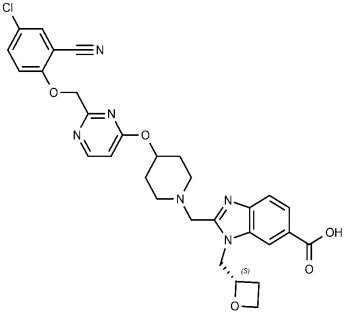
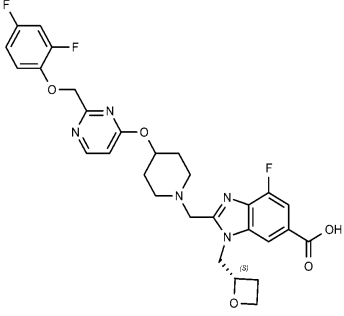
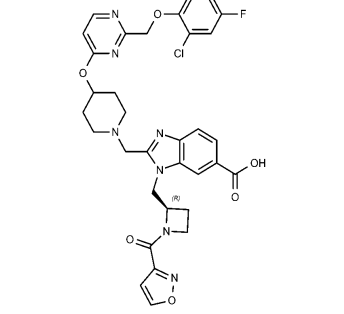
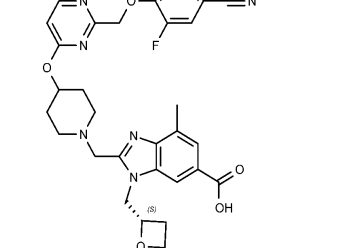
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【表 1 - 7 6】

化合物	構造
481	
482	
483	
484	

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【表 1 - 77】

化合物	構造
485	
486	
487	
488	

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【表 1 - 7 8】

化合物	構造
489	
490	
491	
492	

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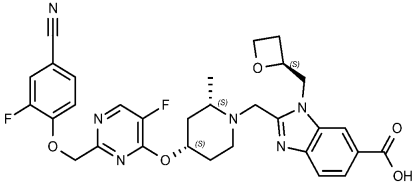
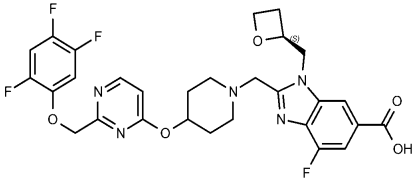
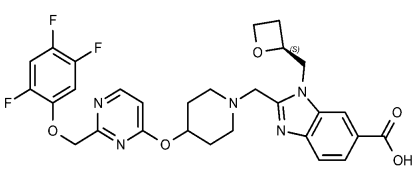
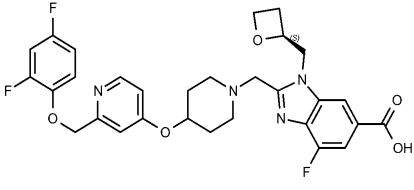
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【表 1 - 7 9】

化合物	構造
493	 <p>Chemical structure of compound 493: A complex molecule featuring a central benzimidazole ring system. The benzimidazole is substituted with a carboxylic acid group (-COOH) at the 2-position and a 4-cyano-2-fluorophenyl group at the 1-position. The 4-position of the benzimidazole is linked via a methylene group to a piperidine ring. The piperidine ring is further substituted with a 4-cyano-2-fluorophenyl group at the 4-position and a 4-fluorophenyl group at the 2-position. The piperidine ring is also linked via a methylene group to a 4-fluorophenyl group.</p>
494	 <p>Chemical structure of compound 494: A complex molecule featuring a central benzimidazole ring system. The benzimidazole is substituted with a carboxylic acid group (-COOH) at the 2-position and a 4-fluorophenyl group at the 1-position. The 4-position of the benzimidazole is linked via a methylene group to a piperidine ring. The piperidine ring is further substituted with a 4-fluorophenyl group at the 4-position and a 2,4-difluorophenyl group at the 2-position. The piperidine ring is also linked via a methylene group to a 2,4-difluorophenyl group.</p>
495	 <p>Chemical structure of compound 495: A complex molecule featuring a central benzimidazole ring system. The benzimidazole is substituted with a carboxylic acid group (-COOH) at the 2-position and a 4-fluorophenyl group at the 1-position. The 4-position of the benzimidazole is linked via a methylene group to a piperidine ring. The piperidine ring is further substituted with a 4-fluorophenyl group at the 4-position and a 2,4-difluorophenyl group at the 2-position. The piperidine ring is also linked via a methylene group to a 2,4-difluorophenyl group.</p>
496	 <p>Chemical structure of compound 496: A complex molecule featuring a central benzimidazole ring system. The benzimidazole is substituted with a carboxylic acid group (-COOH) at the 2-position and a 4-fluorophenyl group at the 1-position. The 4-position of the benzimidazole is linked via a methylene group to a piperidine ring. The piperidine ring is further substituted with a 4-fluorophenyl group at the 4-position and a 2,4-difluorophenyl group at the 2-position. The piperidine ring is also linked via a methylene group to a 2,4-difluorophenyl group.</p>

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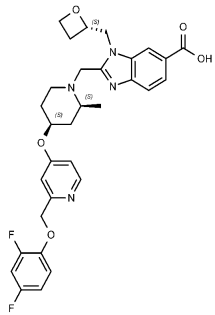
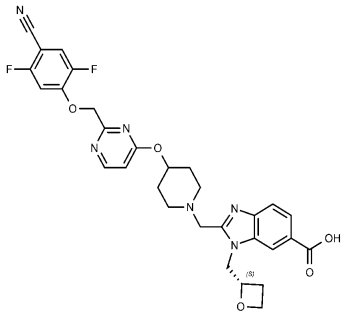
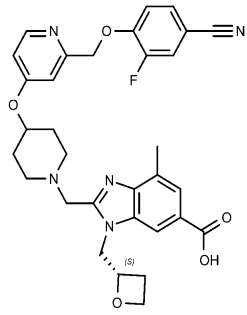
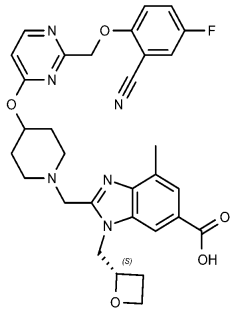
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【表 1 - 80】

化合物	構造
497	
498	
499	
500	

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【表 1 - 8 1】

化合物	構造
501	
502	
503	
504	

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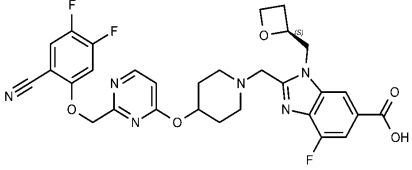
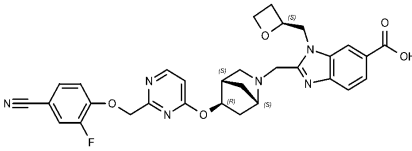
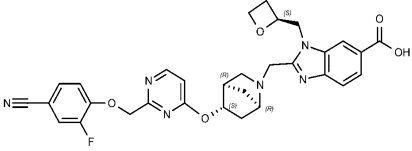
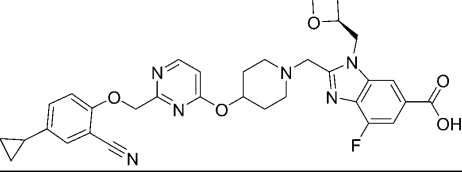
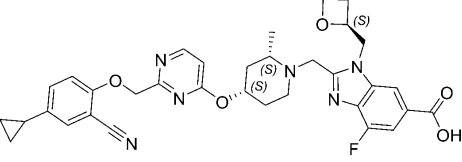
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【表 1 - 8 2】

化合物	構造
505	
506	
507	
508	
509	

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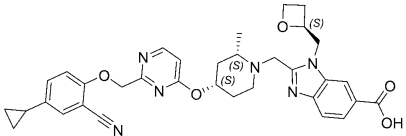
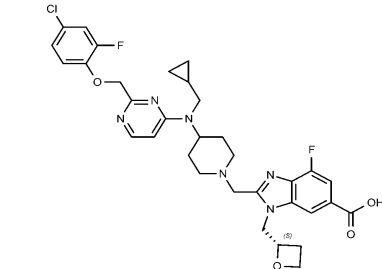
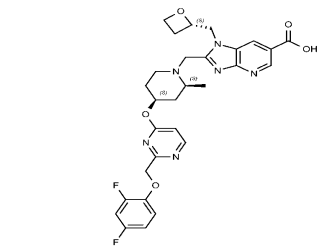
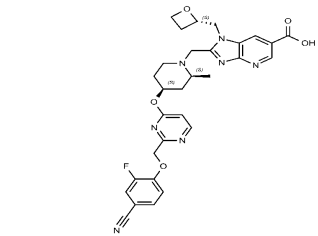
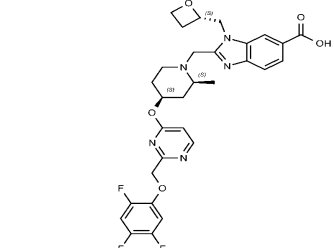
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【表 1 - 8 3】

化合物	構造
510	
511	
512	
513	
514	

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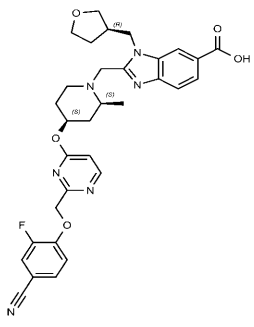
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【表 1 - 8 4】

化合物	構造
515	

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【請求項 1 2】

請求項 1 ~ 1.1 のいずれか 1 項に記載の化合物、またはその薬学的に許容される塩、及び 1 つ以上の薬学的に許容される担体、賦形剤または希釈剤を含む医薬組成物。

【請求項 1 3】

治療に使用するための、請求項 1 ~ 1.1 のいずれか 1 項に記載の化合物、または請求項 1.2 に記載の医薬組成物。

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【請求項 1 4】

代謝性疾患または代謝性障害の処置に使用するための、請求項 1 ~ 1.1 のいずれか 1 項に記載の化合物、または請求項 1.2 に記載の医薬組成物。

【請求項 1 5】

代謝性疾患または代謝性障害の処置のための医薬の製造における、請求項 1 ~ 1.1 のいずれか 1 項に記載の化合物、または請求項 1.2 に記載の医薬組成物の使用。

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