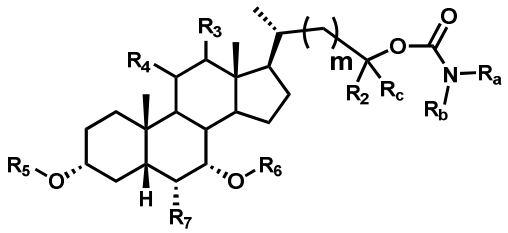
CLAIMS

WHAT IS CLAIMED IS:

1. A compound represented by Formula I or a pharmaceutically acceptable salt thereof:



(I)

wherein:

R_a is selected from the group consisting of:

1) Hydrogen;
2) $-C_1$-C_6 alkoxy; and
3) $-C_1$-C_8 alkyl;

R_b is selected from from the group consisting of:

1) Hydrogen;
2) $-C_1$-C_8 alkyl;
3) $-C_2$-C_8 alkenyl;
4) $-C_2$-C_8 alkynyl;
5) Substituted or unsubstituted arylalkyl;
6) Substituted or unsubstituted aryl;
7) $-C(O)NR_{10}R_{11;}$
8) $-C(O)NHSO_2R_1$;
9) $-SO_2R_1$; and
10) $-C(O)R_1$;

or R_a and R_b are taken together with the nitrogen atom to which they are attached to form a heterocyclic ring;

R_1 is selected from the group consisting of:

1) Halogen;
2) Hydroxyl;
3) Substituted or unsubstituted $-C_1$-C_8 alkyl;

4) Substituted or unsubstituted $-C_2$-C_8 alkenyl;

5) Substituted or unsubstituted $-C_2$-C_8 alkynyl;

6) Substituted or unsubstituted $-C_3$-C_8 cycloalkyl;

7) Substituted or unsubstituted aryl;

8) Substituted or unsubstituted arylalkyl;

9) Substituted or unsubstituted heterocycloalkyl;

10) Substituted or unsubstituted heteroaryl;

11) Substituted or unsubstituted heteroarylalkyl; and

12) $-NR_{10}R_{11}$;

R_2 is Hydrogen;

R_c is Hydrogen;

m is selected from 0, 1, 2 and 3;

R_3 is hydrogen or hydroxyl;

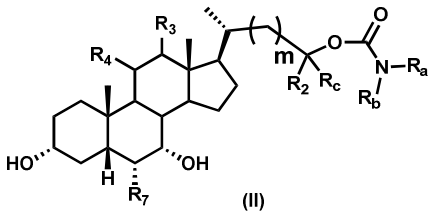
R_4 is hydrogen;

R_5 and R_6 are independently selected from hydrogen or hydroxyl protecting group;

R_7 is Substituted or unsubstituted $-C_1$-C_8 alkyl; and

R_{10} and R_{11} are each independently selected from hydrogen, substituted or unsubstituted $-C_1$-C_8 alkyl, substituted or unsubstituted $-C_2$-C_8 alkenyl, substituted or unsubstituted $-C_2$-C_8 alkynyl, substituted or unsubstituted $-C_3$-C_8 cycloalkyl, or R_{10} and R_{11} are taken together with the nitrogen atom to which they are attached to form a heterocyclic ring.

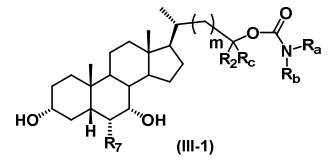
2. A compound of claim 1, represented by Formula II or a pharmaceutically acceptable salt thereof:

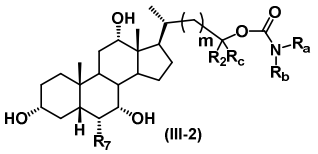


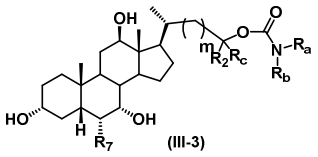
(II)

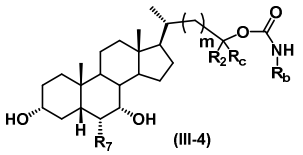
wherein R_a, R_b, R_c, R_2, R_3, R_4, R_7 and m are as defined in claim 1.

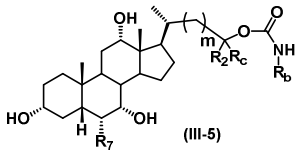
3. A compound of claim 1, represented by one of formulas (III-1~III-18), or a pharmaceutically acceptable salt thereof:

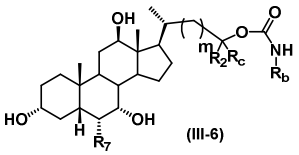

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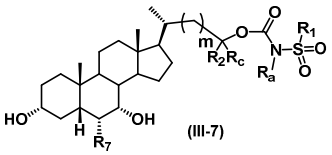

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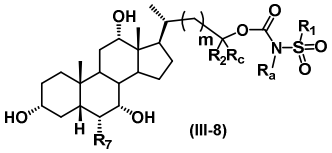

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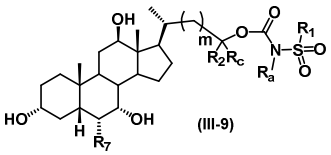

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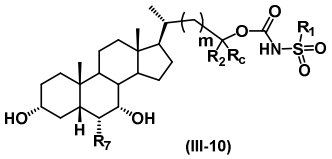

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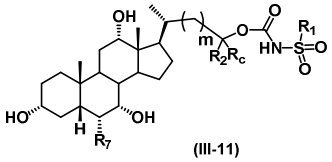

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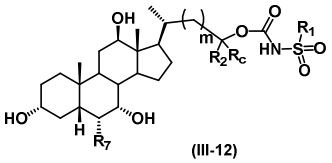

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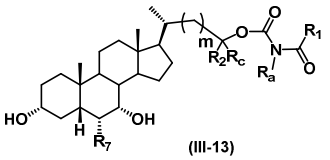

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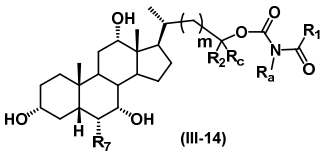

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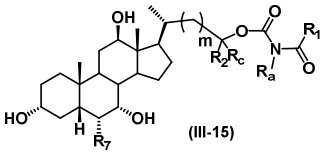

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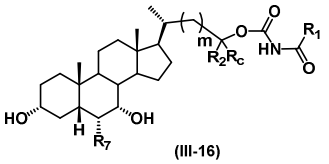

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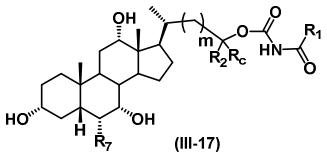

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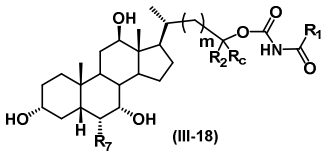

(III-13)


(III-14)


(III-15)


(III-16)

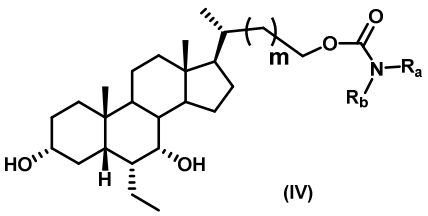

(III-17)


(III-18)

,

wherein, R_a, R_b, R_c, R_1, R_2, R_7 and m are as defined in claim 1.

4. A compound of claim 1, represented by Formula IV or a pharmaceutically acceptable salt thereof:

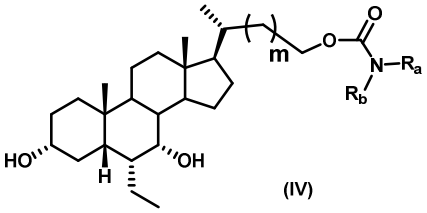

(IV)

wherein, R_a, R_b, and m are as defined in claim 1.

5. The compound of any one of claims 1, 2 or 4, wherein R_b is $-SO_2R_1$.

6. The compound of any one of claims 1-3 and 5, wherein R_7 is ethyl.

7. A compound selected from compounds of Formula IV,

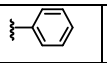
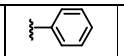
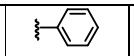


(IV)

wherein, R_a, R_b, and m are delineated for each compound in Table 1, or a pharmaceutically acceptable salt thereof:

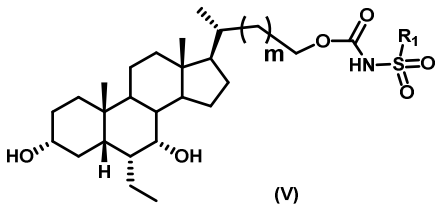
Table 1

Example	m	R_a	R_b	Example	m	R_a	R_b	Example	m	R_a	R_b
1	0	Methyl	H	34	1	Methyl	H	67	2	Methyl	H
2	0	Ethyl	H	35	1	Ethyl	H	68	2	Ethyl	H
3	0	Isopropyl	H	36	1	Isopropyl	H	69	2	Isopropyl	H
4	0	Butyl	H	37	1	Butyl	H	70	2	Butyl	H
5	0	t-Butyl	H	38	1	t-Butyl	H	71	2	t-Butyl	H
6	0	Propyl	H	39	1	Propyl	H	72	2	Propyl	H
7	0	Benzyl	H	40	1	Benzyl	H	73	2	Benzyl	H
8	0	Vinyl	H	41	1	Vinyl	H	74	2	Vinyl	H
9	0	Allyl	H	42	1	Allyl	H	75	2	Allyl	H
10	0	CF_3	H	43	1	CF_3	H	76	2	CF_3	H
11	0		H	44	1		H	77	2		H
12	0		H	45	1		H	78	2		H
13	0		H	46	1		H	79	2		H
14	0		H	47	1		H	80	2		H
15	0	Methyl	Me	48	1	Methyl	Me	81	2	Methyl	Me
16	0	Ethyl	Me	49	1	Ethyl	Me	82	2	Ethyl	Me
17	0	Isopropyl	Me	50	1	Isopropyl	Me	83	2	Isopropyl	Me
18	0	t-Butyl	Me	51	1	t-Butyl	Me	84	2	t-Butyl	Me
19	0	Propyl	Me	52	1	Propyl	Me	85	2	Propyl	Me
20	0	Benzyl	Me	53	1	Benzyl	Me	86	2	Benzyl	Me
21	0	Vinyl	Me	54	1	Vinyl	Me	87	2	Vinyl	Me
22	0	Allyl	Me	55	1	Allyl	Me	88	2	Allyl	Me
23	0	CF_3	Me	56	1	CF_3	Me	89	2	CF_3	Me
24	0		Me	57	1		Me	90	2		Me
25	0		Me	58	1		Me	91	2		Me

26	0		59	1		92	2	
27	0		60	1		93	2	
28	0		61	1		94	2	
29	0		62	1		95	2	
30	0		63	1		96	2	
31	0		64	1		97	2	
32	0		65	1		98	2	
33	0		66	1		99	2	

.

8. A compound according to claim 1, which is selected from compounds of Formula V, or a pharmaceutically acceptable salt thereof:

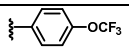
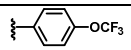
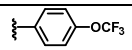
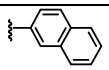
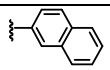
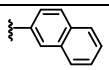


(V) ,

wherein R_1 and m are delineated for each compound in Table 2:

Table 2

Example	m	R_1	Example	m	R_1	Example	m	R_1
100	0	Methyl	127	1	Methyl	154	2	Methyl
101	0	Ethyl	128	1	Ethyl	155	2	Ethyl
102	0	Isopropyl	129	1	Isopropyl	156	2	Isopropyl
103	0	Butyl	130	1	Butyl	157	2	Butyl
104	0	t-Butyl	131	1	t-Butyl	158	2	t-Butyl
105	0	Propyl	132	1	Propyl	159	2	Propyl
106	0	Benzyl	133	1	Benzyl	160	2	Benzyl
107	0	Vinyl	134	1	Vinyl	161	2	Vinyl
108	0	Allyl	135	1	Allyl	162	2	Allyl
109	0	CF_3	136	1	CF_3	163	2	CF_3
110	0		137	1		164	2	

111	0		138	1		165	2	
112	0		139	1		166	2	
113	0		140	1		167	2	
114	0		141	1		168	2	
115	0		142	1		169	2	
116	0		143	1		170	2	
117	0		144	1		171	2	
118	0	NH_2	145	1	NH_2	172	2	NH_2
119	0		146	1		173	2	
120	0		147	1		174	2	
121	0		148	1		175	2	
122	0		149	1		176	2	
123	0		150	1		177	2	
124	0		151	1		178	2	
125	0		152	1		179	2	
126	0	F	153	1	F	180	2	F

.

9. A compound according to claim 1, selected from compounds of Formula VI:

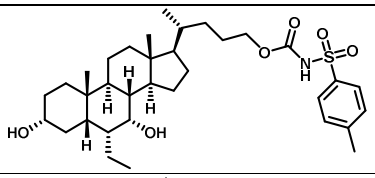
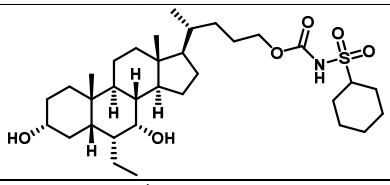
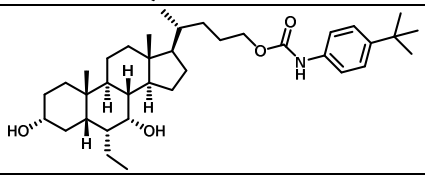
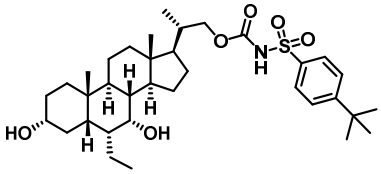
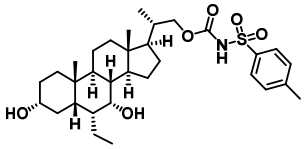
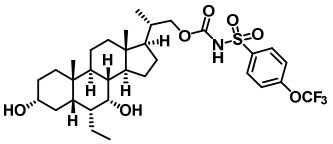
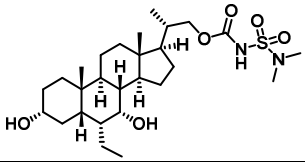
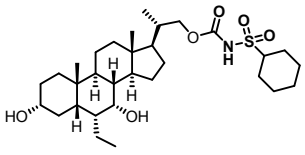
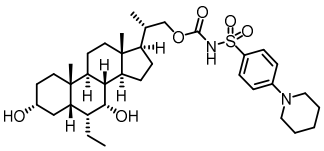
(VI)

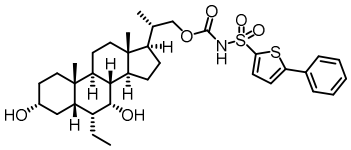
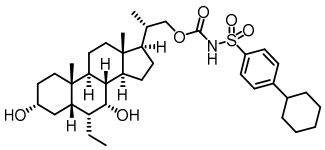
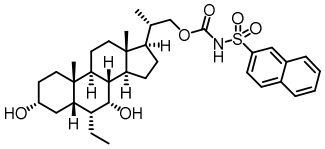
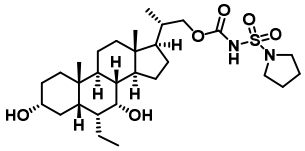
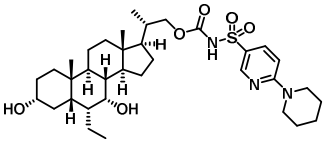
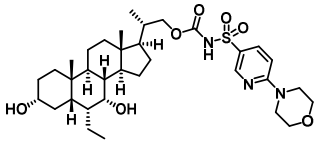
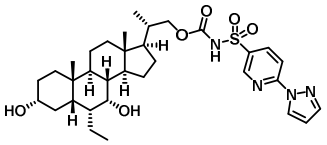
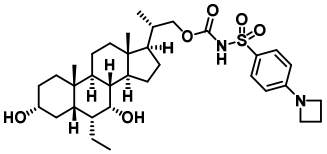
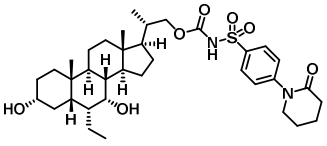
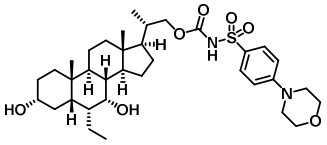
wherein R_1 and m for each compound are set forth in Table 3, or a pharmaceutically acceptable salt thereof:

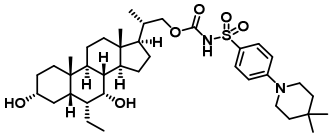
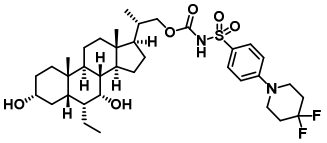
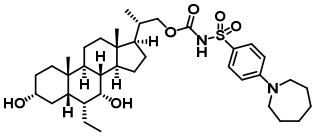
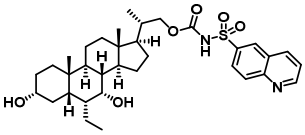
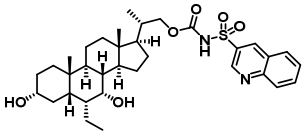
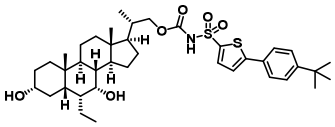
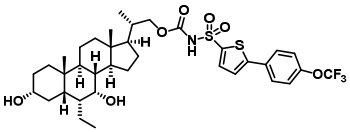
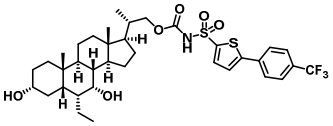
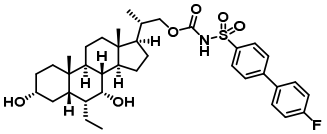
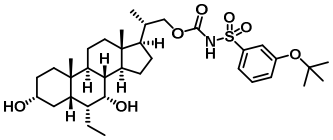
Table 3

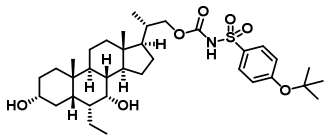
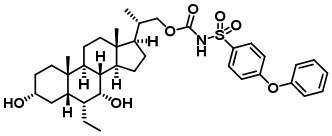
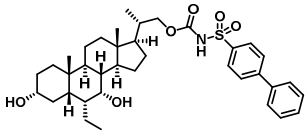
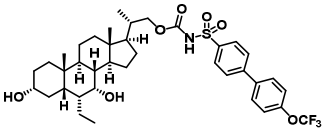
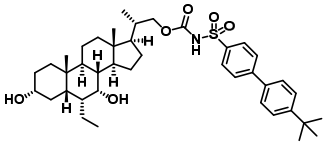
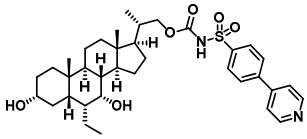
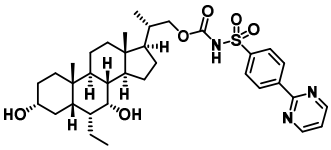
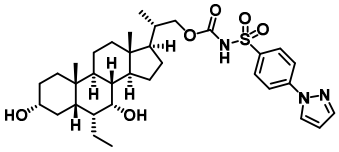
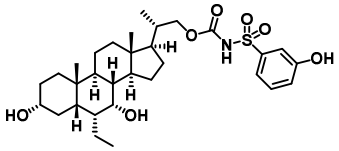
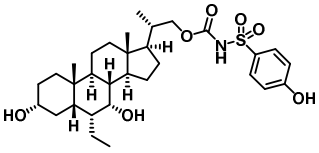
Compound	m	R_1	Compound	m	R_1	Compound	m	R_1
181	0	Methyl	208	1	Methyl	235	2	Methyl
182	0	Ethyl	209	1	Ethyl	236	2	Ethyl
183	0	Isopropyl	210	1	Isopropyl	237	2	Isopropyl
184	0	Butyl	211	1	Butyl	238	2	Butyl
185	0	t-Butyl	212	1	t-Butyl	239	2	t-Butyl
186	0	Propyl	213	1	Propyl	240	2	Propyl
187	0	Benzyl	214	1	Benzyl	241	2	Benzyl
188	0	Vinyl	215	1	Vinyl	242	2	Vinyl
189	0	Allyl	216	1	Allyl	243	2	Allyl
190	0	CF_3	217	1	CF_3	244	2	CF_3
191	0		218	1		245	2	
192	0		219	1		246	2	
193	0		220	1		247	2	
194	0		221	1		248	2	
195	0		222	1		249	2	
196	0		223	1		250	2	
197	0		224	1		251	2	
198	0		225	1		252	2	
199	0	NH_2	226	1	NH_2	253	2	NH_2
200	0		227	1		254	2	
201	0		228	1		255	2	
202	0		229	1		256	2	
203	0		230	1		257	2	
204	0		231	1		258	2	
205	0		232	1		259	2	
206	0		233	1		260	2	
207	0	F	234	1	F	261	2	F

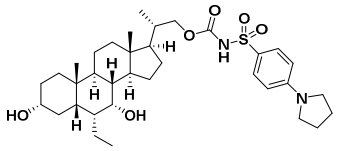
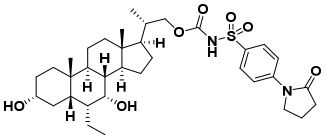
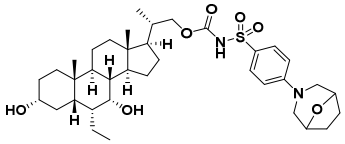
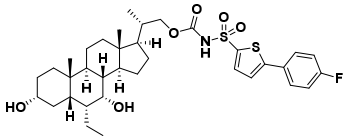
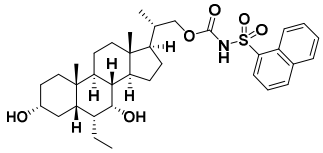
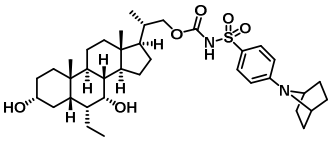
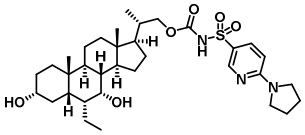
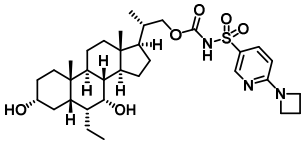
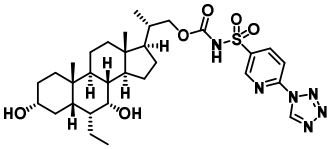
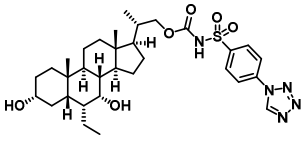
10. A compound selected from the compounds set forth below, or a pharmaceutically acceptable salt thereof:

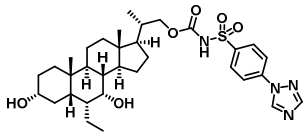
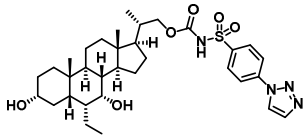
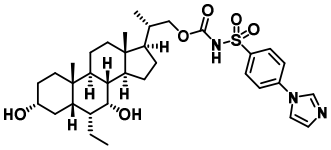
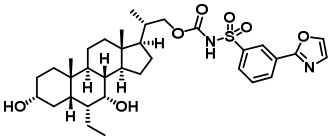
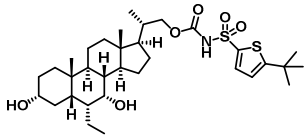
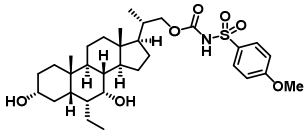
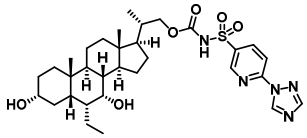
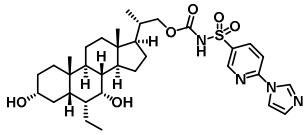
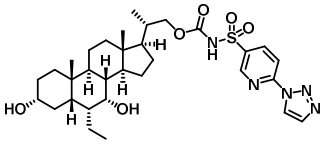
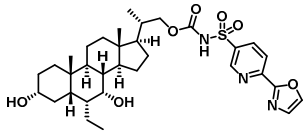
Example #	Structure
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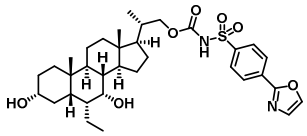
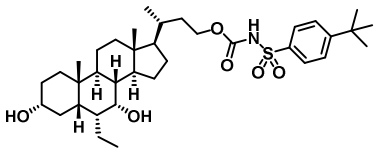
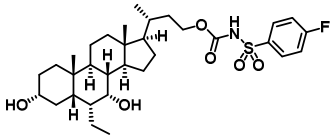
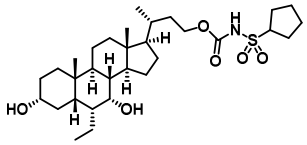
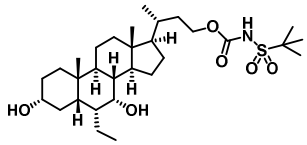
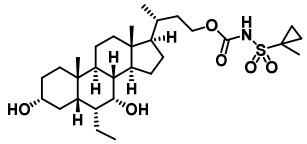
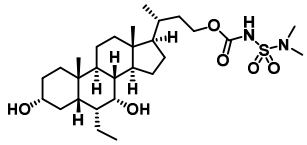
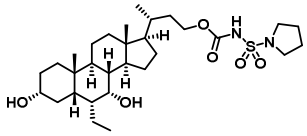
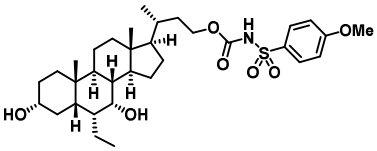
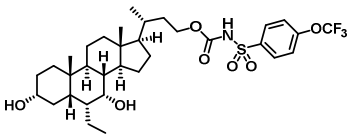
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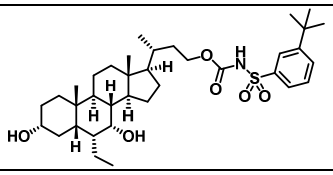
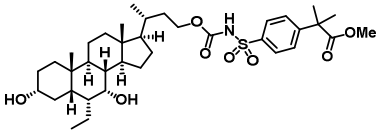
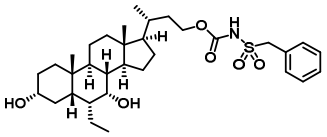
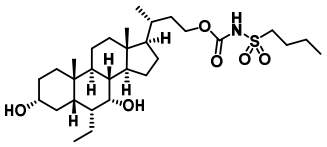
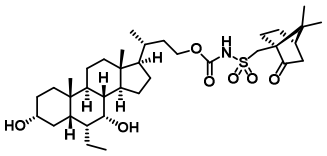
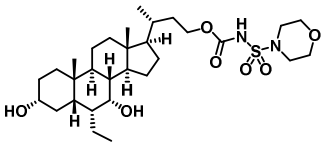
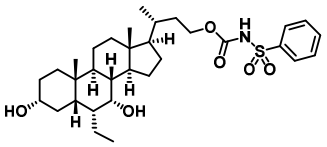
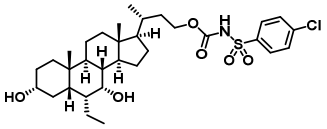
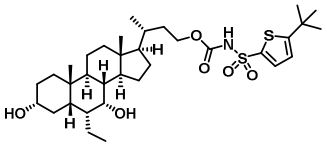
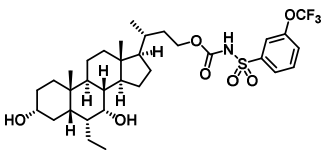
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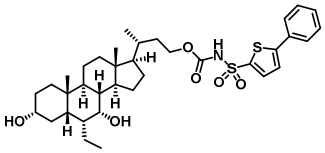
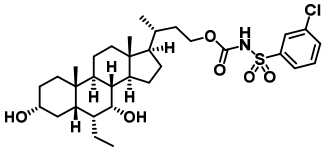
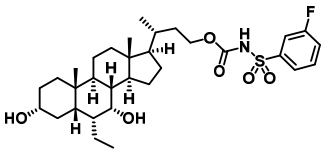
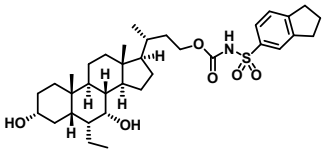
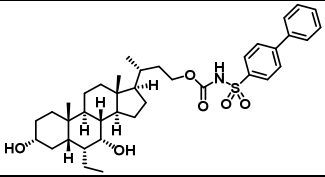
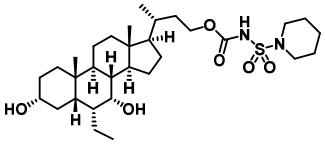
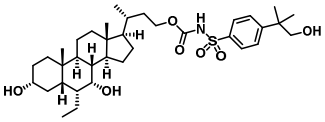
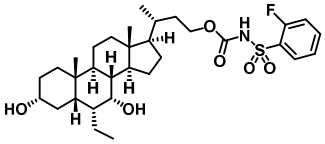
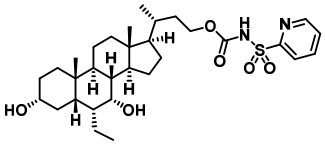
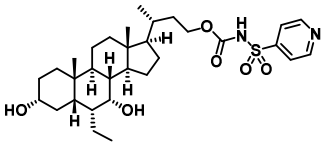
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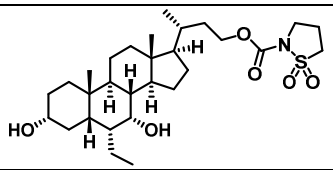
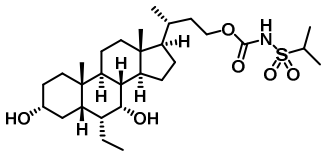
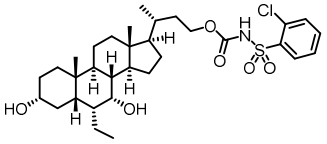
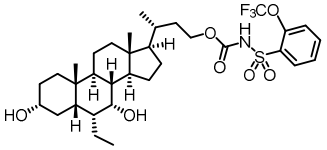
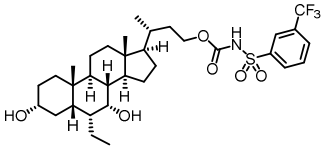
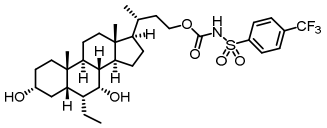
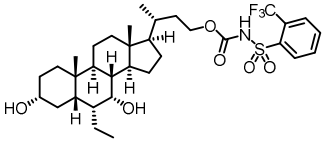
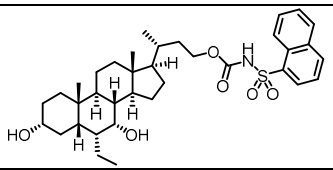
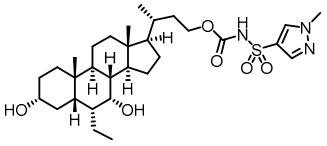
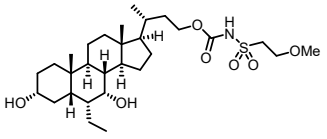
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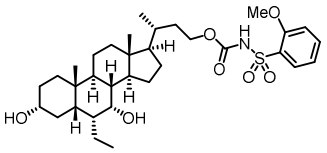
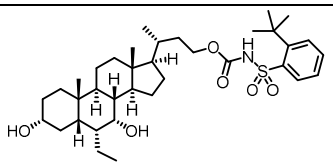
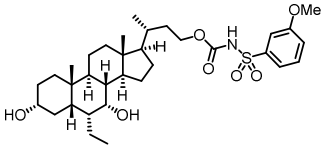
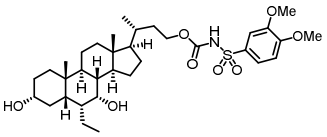
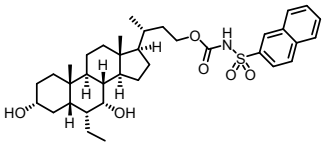
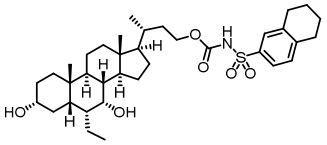
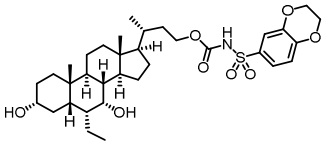
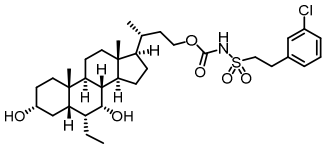
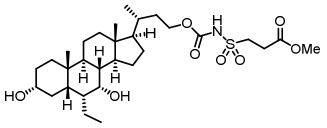
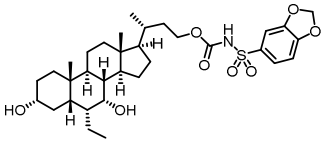
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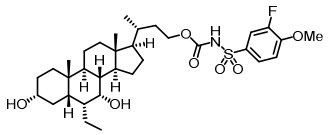
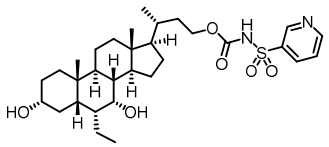
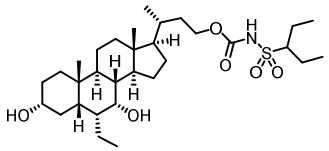
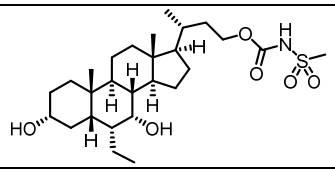
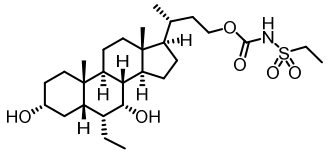
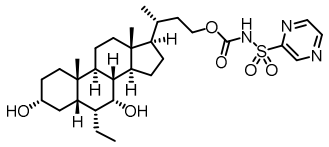
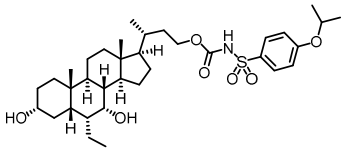
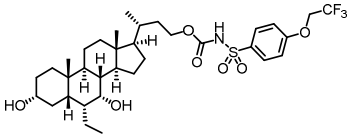
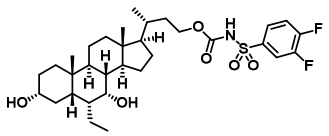
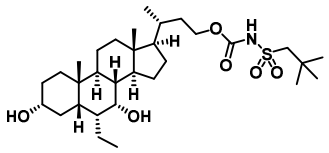
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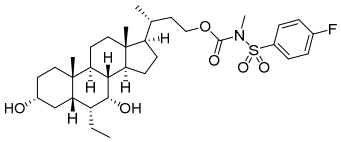
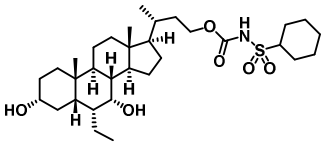
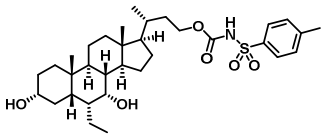
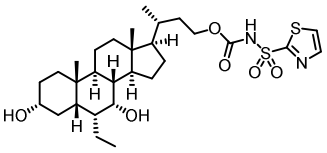
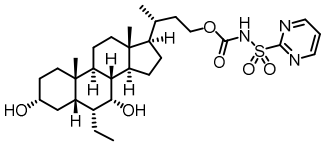
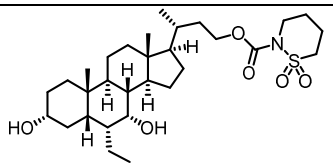
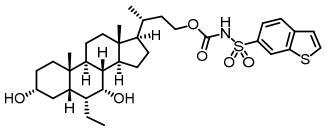
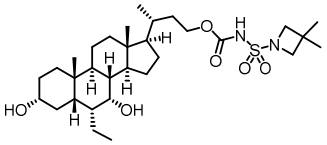
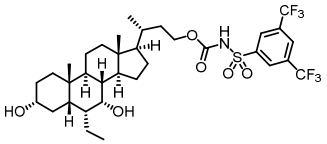
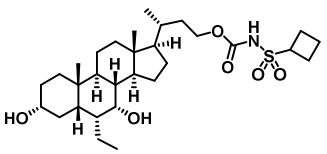
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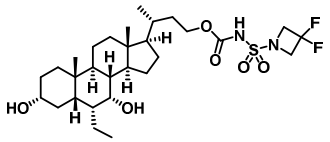
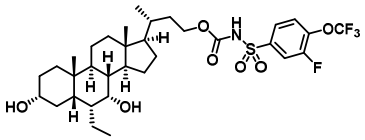
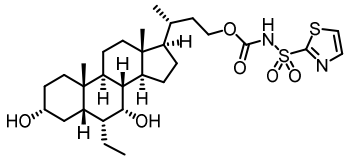
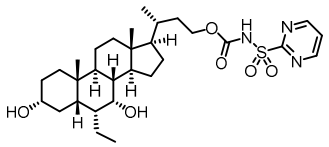
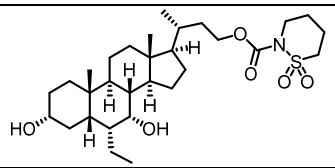
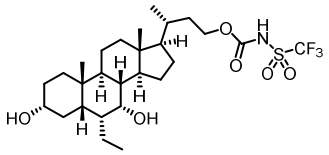
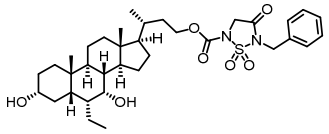
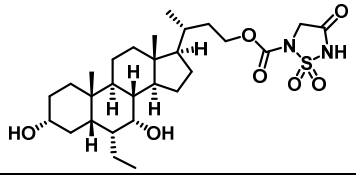
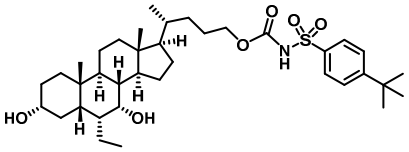
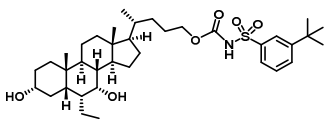
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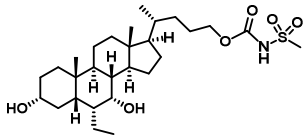
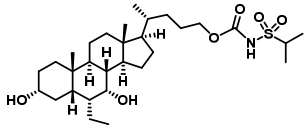
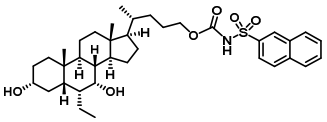
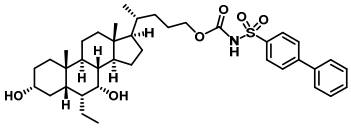
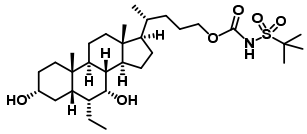
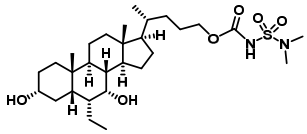
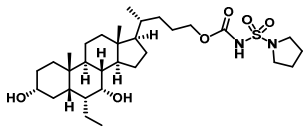
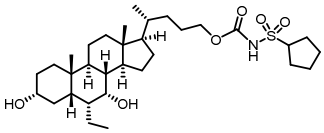
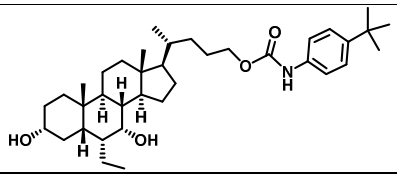
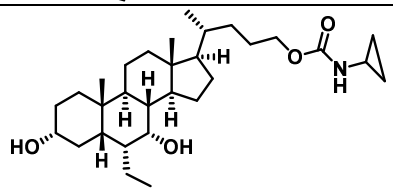
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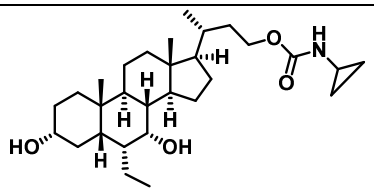
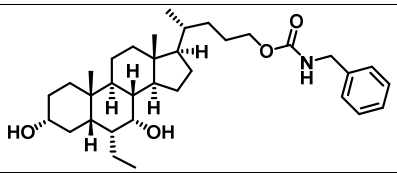
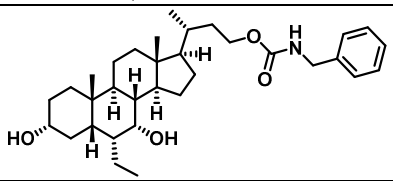
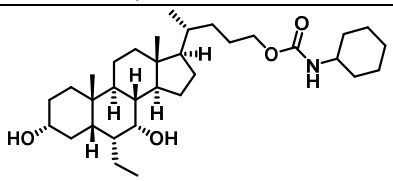
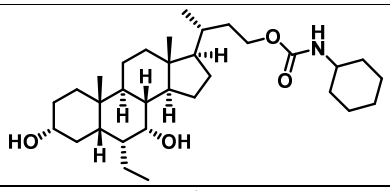
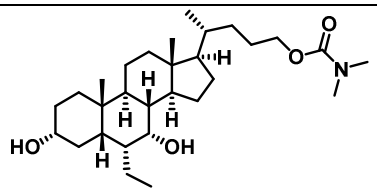
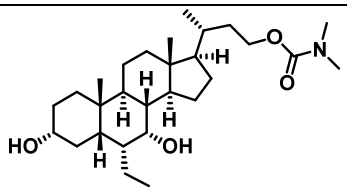
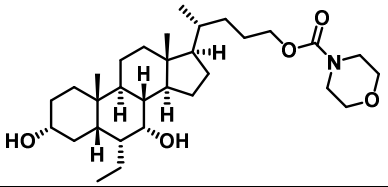
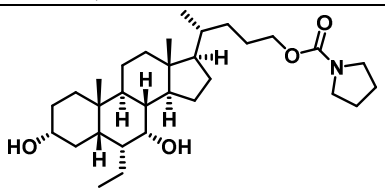
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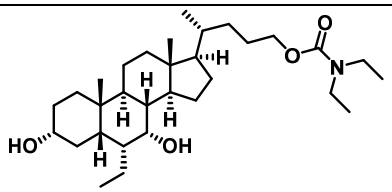
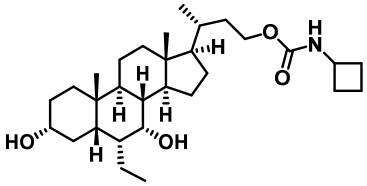
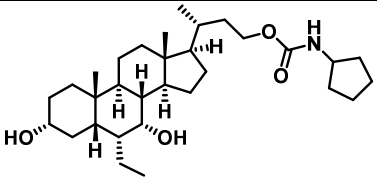
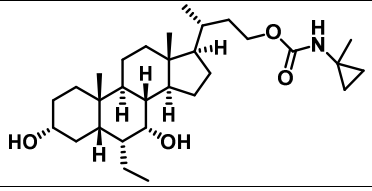
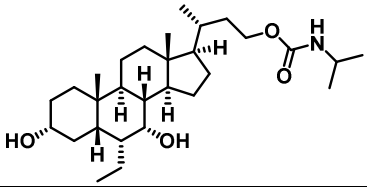
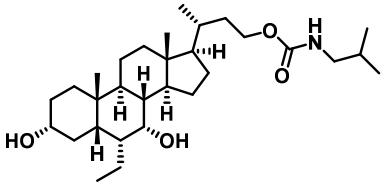
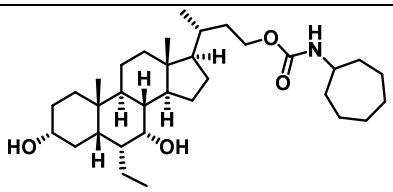
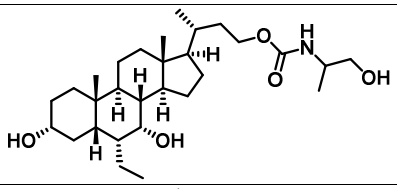
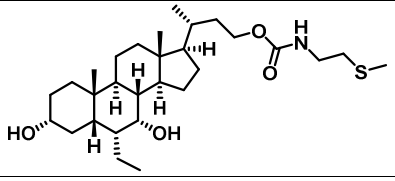
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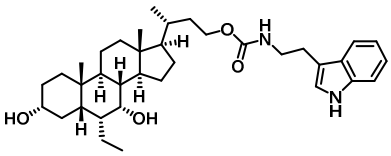
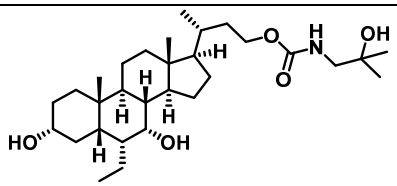
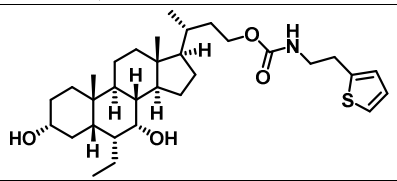
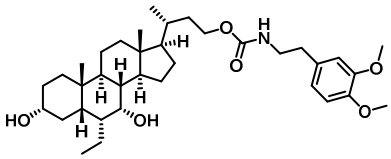
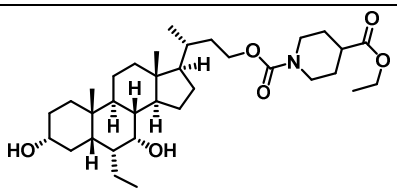
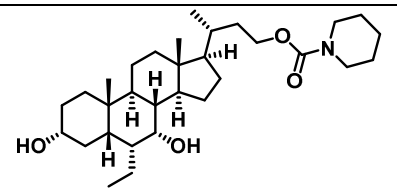
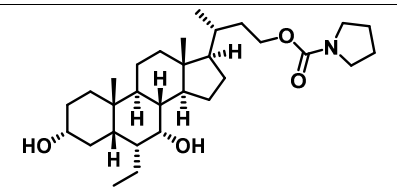
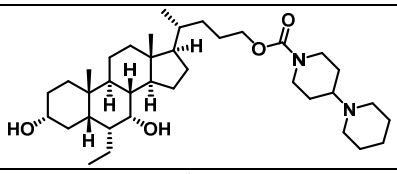
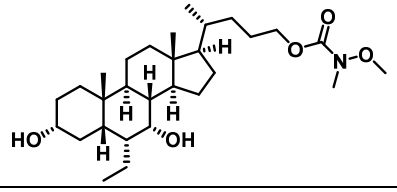
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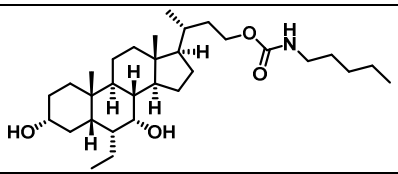
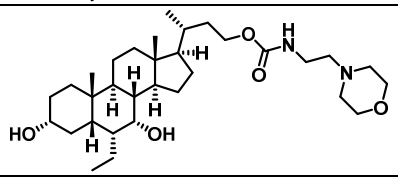
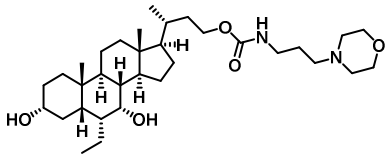
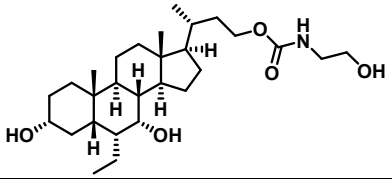
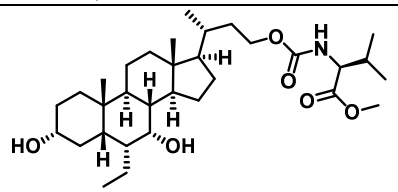
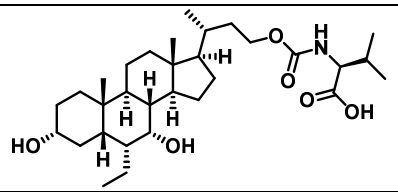
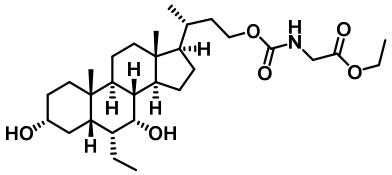
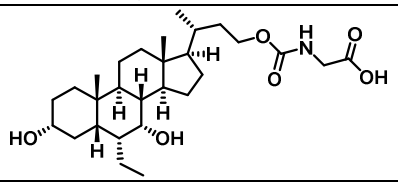
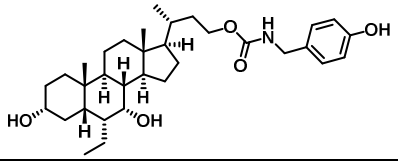
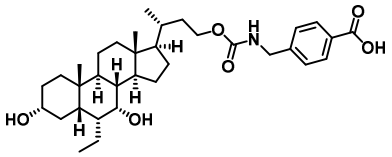
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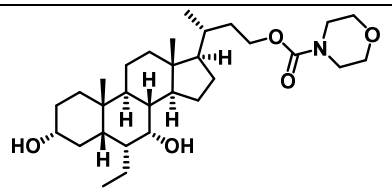
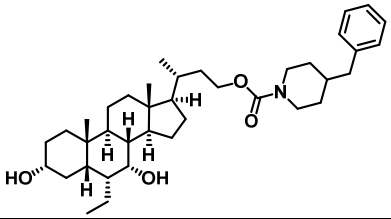
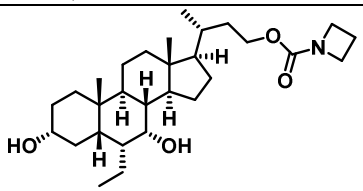
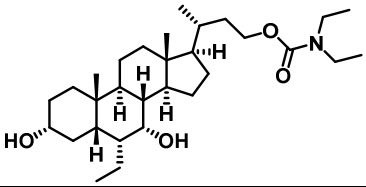
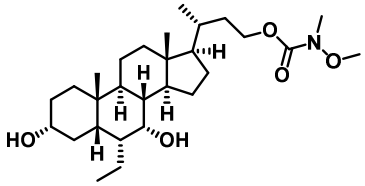
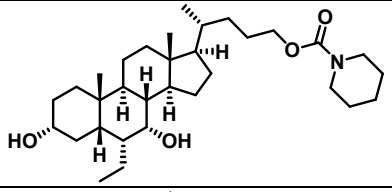
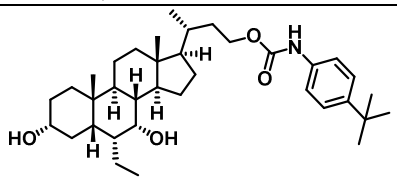
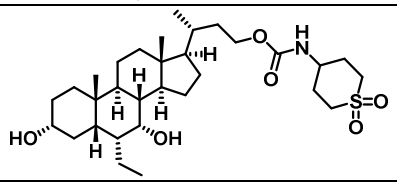
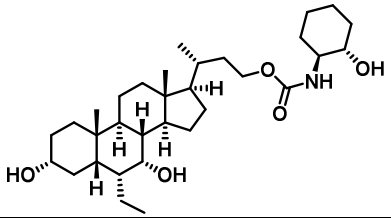
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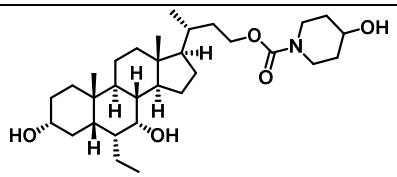
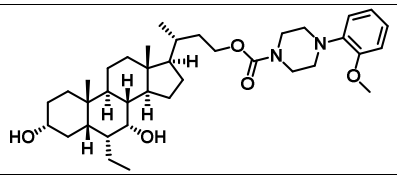
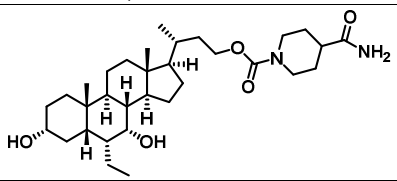
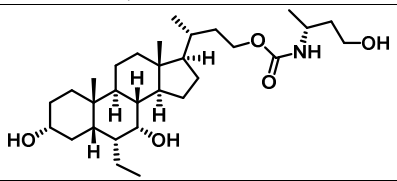
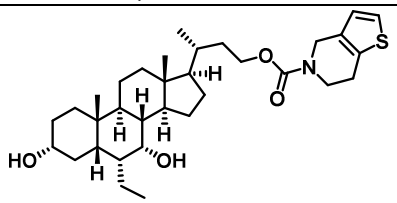
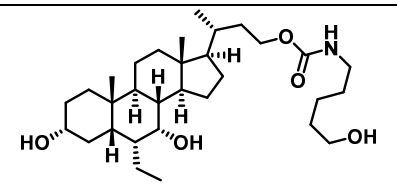
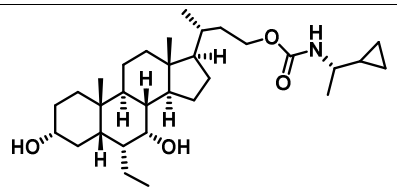
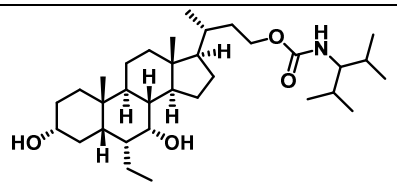
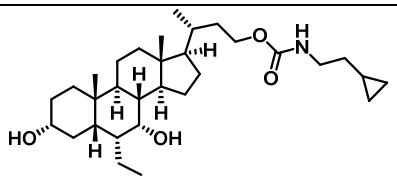
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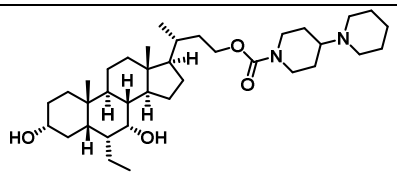
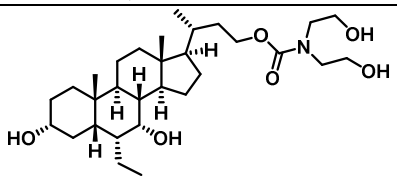
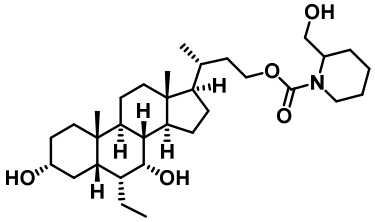
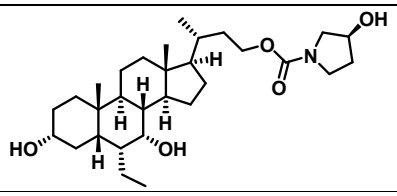
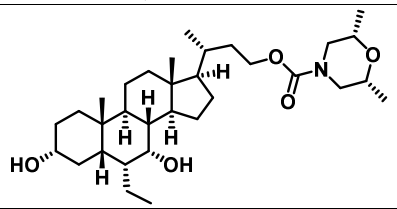
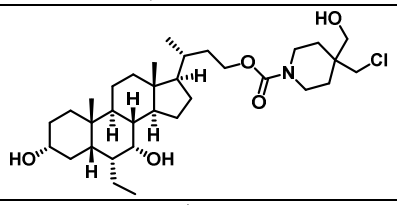
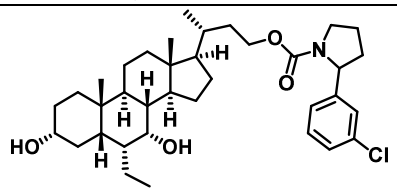
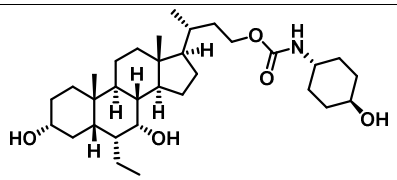
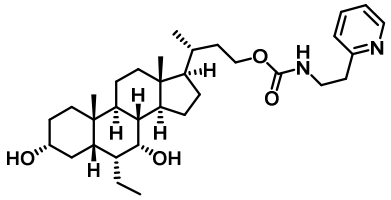
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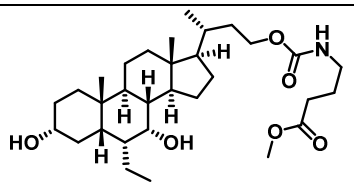
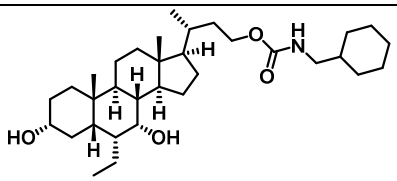
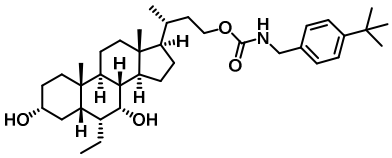
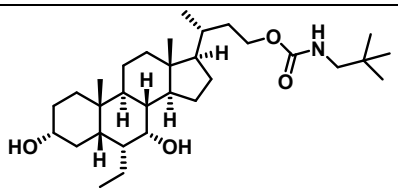
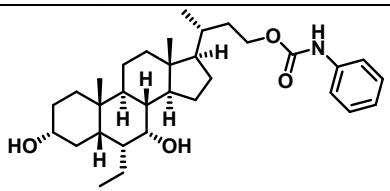
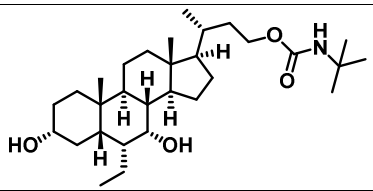
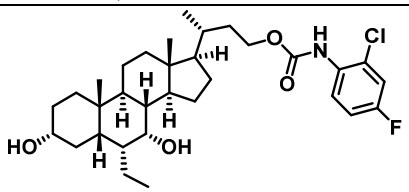
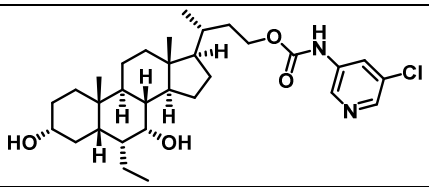
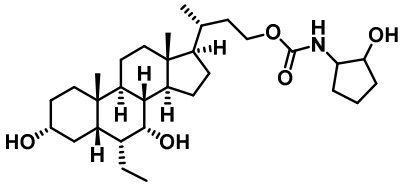
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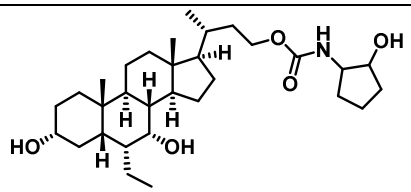
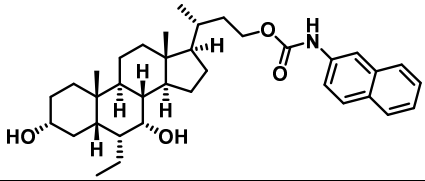
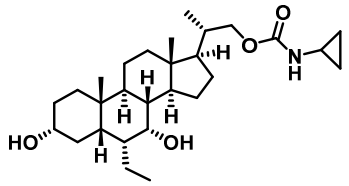
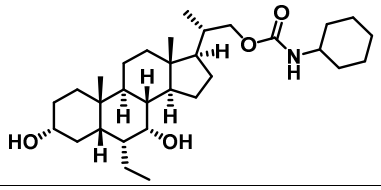
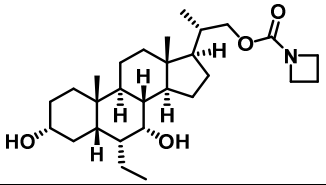
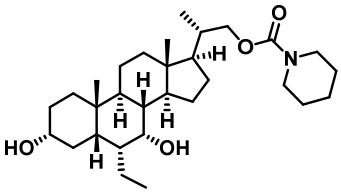
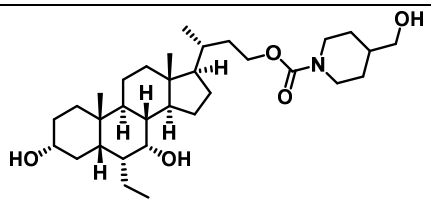
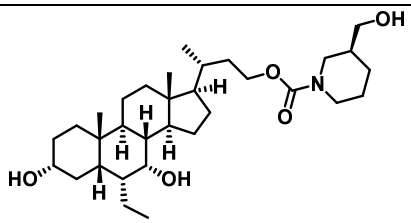
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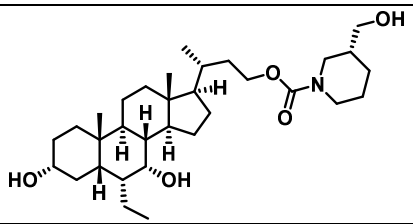
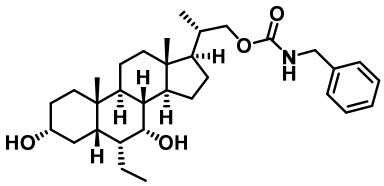
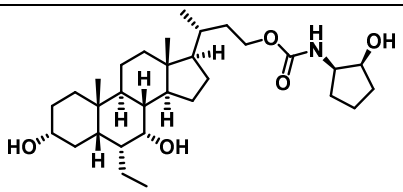
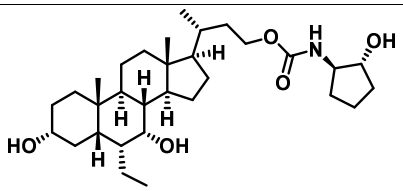
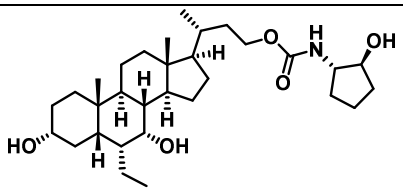
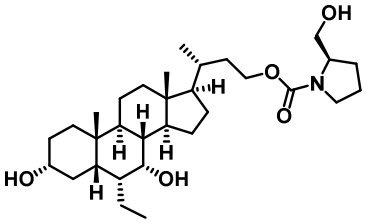
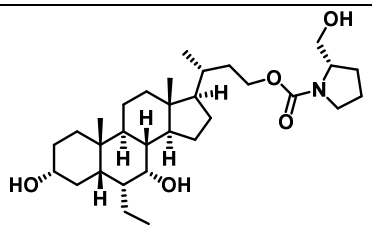
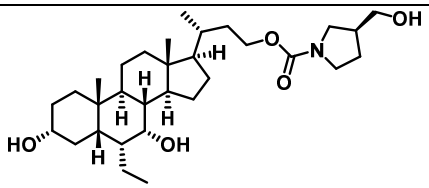
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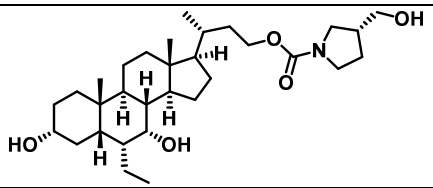
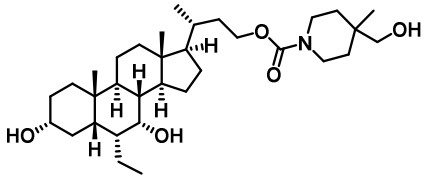
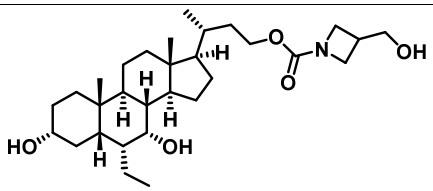
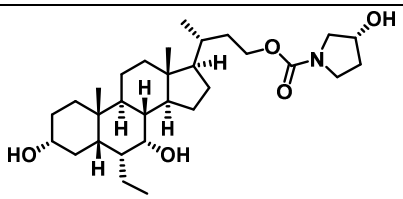
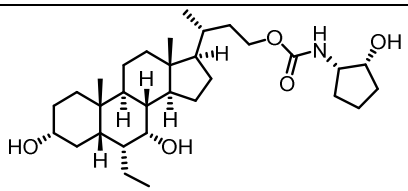
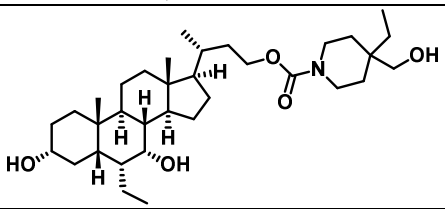
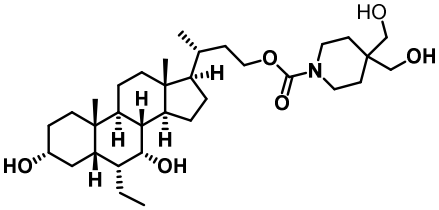
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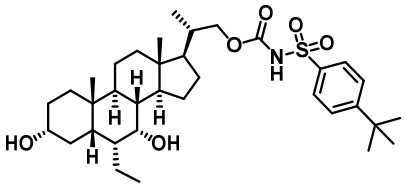
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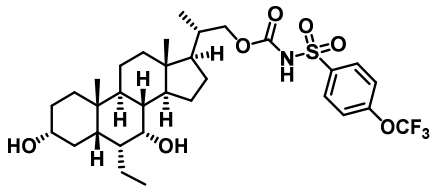
11. The compound of claim 10 having the structure



,

or a pharmaceutically acceptable salt thereof.

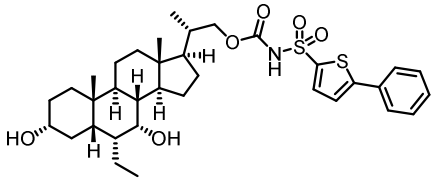
12. The compound of claim 10 having the structure



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or a pharmaceutically acceptable salt thereof.

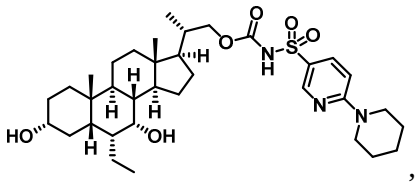
13. The compound of claim 10 having the structure



,

or a pharmaceutically acceptable salt thereof.

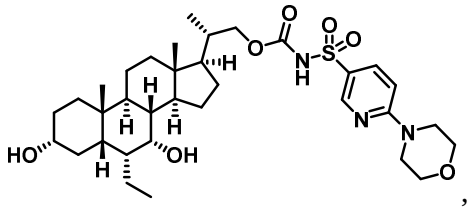
14. The compound of claim 10 having the structure



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or a pharmaceutically acceptable salt thereof.

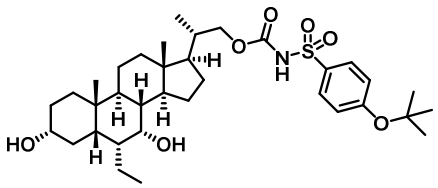
15. The compound of claim 10 having the structure



,

or a pharmaceutically acceptable salt thereof.

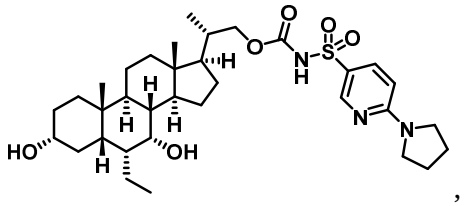
16. The compound of claim 10 having the structure



,

or a pharmaceutically acceptable salt thereof.

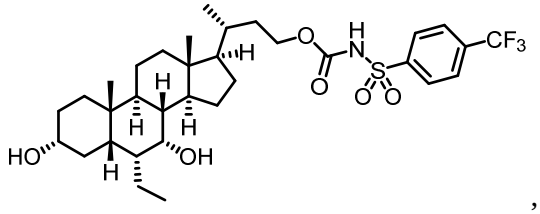
17. The compound of claim 10 having the structure



,

or a pharmaceutically acceptable salt thereof.

18. The compound of claim 10 having the structure



,

or a pharmaceutically acceptable salt thereof.

19. A pharmaceutical composition comprising a compound according to any one of claims 1-18 and a pharmaceutically acceptable carrier.

20. Use of a therapeutically effective amount of a compound according to any one of claims 1-18 in the manufacture of a medicament for the prevention or treatment of a disease or condition selected from the group consisting of primary biliary cirrhosis, cerebrotendinous xanthomatosis, primary sclerosing cholangitis, alcoholic liver disease, nonalcoholic fatty liver disease, nonalcoholic steatohepatitis, atherosclerosis, hypercholesterolemia, hypertriglyceridemia, Type II diabetes, and hepatocellular carcinoma in a mammal wherein the medicament is to be administered to the mammal suffering from the disease or condition.

21. The use according to claim 20, wherein the disease or condition is primary biliary cirrhosis.

22. The use according to claim 20, wherein the disease or condition is nonalcoholic fatty liver disease.

23. The use according to claim 20, wherein the disease or condition is nonalcoholic steatohepatitis.

24. The use according to claim 20, wherein the disease or condition is Type II diabetes.