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C07D 519/00 (2006.01)

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(54)	Title	SUBSTITUTED ALIPHANES, CYCLOPHANES, HETERAPHANES, HETEROPHANES, HETERO-HETERAPHANES AND METALLOCENES USEFUL FOR TREATING HCV INFECTIONS
(56)	References Cited:	WO-A1-2010/059937 WO-A2-2010/068760 US-A- 5 147 882 US-A1- 2009 082 261

Enclosed is a translation of the patent claims in Norwegian. Please note that as per the Norwegian Patents Acts, section 66i the patent will receive protection in Norway only as far as there is agreement between the translation and the language of the application/patent granted at the EPO. In matters concerning the validity of the patent, language of the application/patent granted at the EPO will be used as the basis for the decision. The patent documents published by the EPO are available through Espacenet (<http://worldwide.espacenet.com>) or via the search engine on our website here: <https://search.patentstyret.no/>

5 Patentkrav

1. Forbindelse på formelen

10 T-R-J¹-W-A-W-J¹-R-T; T-R-J¹-A-J¹-R-T; T-R-J²-A-J²-R-T; T-R-J¹-W-A-J¹-R-T; T-R-J¹-W-A-J²-R-T; eller T-R-J¹-A-J²-R-T (formel I)

eller et farmasøytisk akseptabelt salt av dette;

der

T er uavhengig valgt for hver forekomst blant T¹ og T²; og

15 T¹ er -Y-Z, der Y er kovalent bundet til R og Y er en binding, C₁-C₄-alkylen opsjonelt substituert med okso; og Z er en 5- eller 6-leddet heterosyklisk gruppe, der hver T¹ er substituert med (i) minst én substituent valgt blant -(C=O)OH, -(C=O)NH₂, -(C=O)H, - C₁-C₄-alkoksy, C₂-C₄-alkanoyl, C₁-C₄-alkylester, C₁-C₄-alkenylester, mono- eller di-C₁-C₄-alkylkarboksamid og (ii) opsjonelt substituert med én eller flere substituent uavhengig valgt
20 blant halogen, hydroksyl, C₁-C₂-alkyl og C₁-C₂-alkoksy;

T² er uavhengig valgt for hver forekomst blant C₂-C₆-alkanoyl, C₁-C₆-alkylester, C₁-C₆-alkenylester, C₁-C₆-alkylsulfonamid, C₁-C₆-alkylsulfonyl, C₂-C₆-alkanoyl substituert med mono- eller di-C₁-C₆-hydrokarbylkarbamat, C₂-C₆-alkanoyl substituert med urea eller mono- eller di-C₁-C₆-alkylurea, og C₂-C₆-alkanoyl substituert med mono- eller di-C₁-C₆-alkylkarboksamid, der hver T² er opsjonelt substituert med 1 eller flere substituent uavhengig valgt blant amino, cyan, hydroksyl, halogen, (C₁-C₄-alkoksy)C₀-C₄-alkyl, (mono- og di-C₁-C₄-alkylamino)C₀-C₄-alkyl, C₁-C₆-alkyl, (C₁-C₄-tioalkyl)C₀-C₄-alkyl, C₃-C₇-sykloalkyl, fenyl, C₁-C₂-haloalkyl og C₁-C₂-haloalkoksy;

30 R er uavhengig valgt for hver forekomst blant 4- til 6-leddede ringer som inneholder ett eller to nitrogenatomer, der resterende ringatomer er karbon, der R er mettet eller inneholder 1 umettet binding og opsjonelt er forbundet med en metylen- eller etylenbro, eller kondensert med et fenyl eller en 5- til 6-leddet heteroarylring; og

- 2 -

6- til 10-leddet kondensert eller spiro- bisyklisk ringsystem som inneholder ett eller to nitrogenatomer, der resterende ringatomer er karbon, der den 6- til 10-leddede bisykliske ringen er mettet eller inneholder 1 umettet binding;

hver R er opsjonelt substituert med én eller flere substituenten uavhengig valgt blant cyan,

5 hydroksyl, halogen, C₁-C₂-alkyl, C₁-C₂-alkoksy, C₁-C₂-haloalkyl, C₁-C₂-haloalkyl, C₁-C₂-haloalkyl og C₁-C₂-alkylsulfonyl;

J¹ er fenyl eller en 5- til 6-leddet heteroarylgruppe som inneholder 1 til 3 heteroatomer uavhengig valgt blant N, O og S, der hver J¹ er opsjonelt substituert med én eller flere substituenten uavhengig valgt blant amino, cyan, hydroksyl, halogen, C₁-C₄-alkyl, C₁-C₄-alkoksy, mono- og di-C₁-C₄-alkylamino, C₁-C₂-haloalkyl og C₁-C₂-haloalkoksy;

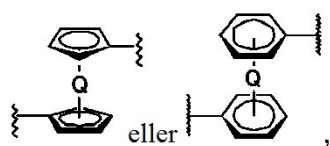
10 J² er en 8- til 10-leddet heteroarylgruppe som inneholder 1 til 4 heteroatomer uavhengig valgt blant N, O og S, der J² er opsjonelt substituert med én eller flere substituenten uavhengig valgt blant amino, cyan, hydroksyl, halogen, C₁-C₄-alkyl, C₁-C₄-alkoksy, mono- og di-C₁-C₄-alkylamino, C₁-C₂-haloalkyl og C₁-C₂-haloalkoksy;

15 W er uavhengig valgt for hver forekomst og er en fenyl-, pyridyl- eller alkynylgruppe opsjonelt substituert med én eller flere substituenten uavhengig valgt blant amino, cyan, hydroksyl, halogen, C₁-C₄-alkyl, C₁-C₄-alkoksy, mono- og di-C₁-C₄-alkylamino, C₁-C₂-haloalkyl og C₁-C₂-haloalkoksy;

20 A er en [j.k]-syklofan, [j.k]-hetera-fan, [j.k]-hetero-fan, [j.k]-hetero-hetera-fan, eller [j.k]-alifan; der j er et heltall fra 1 til 4, k er et heltall fra 1 til 4, forskjellen mellom j og k ikke er mer enn 2, og hver j- og k-forbinder opsjonelt inneholder et heteroatom valgt blant N, O og S opsjonelt substituert med 1 oksogruppe, og én eller flere substituenten uavhengig valgt blant halogen, hydroksy, amino, C₁-C₂-alkyl og C₁-C₂-alkoksy; eller

25 A er en [j.k.j'.k']-syklofan, der j, j', k og k' er heltall fra 1 til 4, forskjellen mellom j og k eller k' ikke er mer enn 2, forskjellen mellom j' og k eller k' ikke er mer enn 2, og hver j-, j'-, k- og k'-forbinder opsjonelt inneholder et heteroatom valgt blant N, O og S, og er opsjonelt substituert med 1 oksogruppe, og én eller flere substituenten uavhengig valgt blant halogen, hydroksy, amino, C₁-C₂-alkyl og C₁-C₂-alkoksy; eller

A er en gruppe på formelen



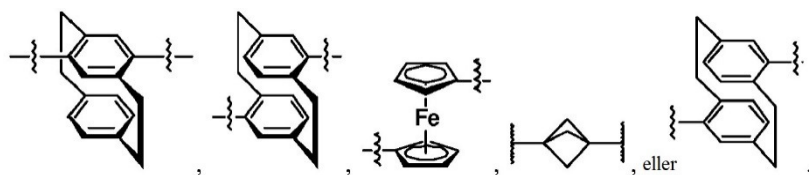
- 3 -

der Q er et nøytralt eller kationisk metall, der hver A er opsjonelt substituert med én eller flere substituenten uavhengig valgt blant halogen, C₁-C₂-alkyl og C₁-C₂-alkoksy; eller A er en gruppe på formelen



- 5 der A er opsjonelt substituert med én eller flere substituenten uavhengig valgt blant halogen, C₁-C₂-alkyl og C₁-C₂-alkoksy.

2. Forbindelse eller salt ifølge krav 1, der A er en av

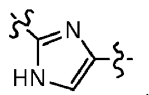


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3. Forbindelse eller salt ifølge krav 1, der

W er fenyl, opsjonelt substituert med én eller flere substituenten uavhengig valgt blant halogen, C₁-C₂-alkyl og C₁-C₂-alkoksy.

- 15 4. Forbindelse eller salt ifølge krav 1, der J¹ er

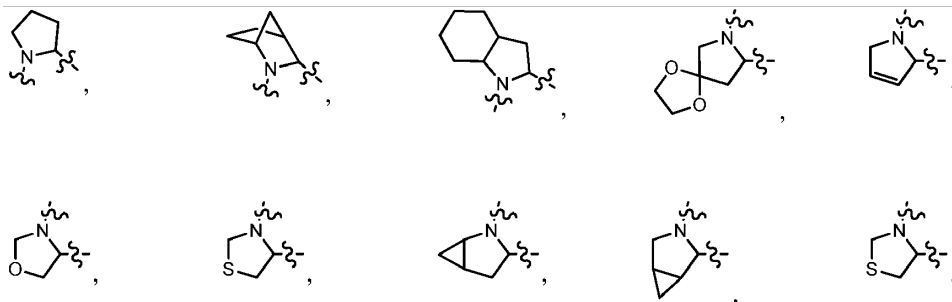


5. Forbindelse eller salt ifølge krav 1, der

J² er en benzimidazolgruppe, opsjonelt substituert med én eller flere substituenten uavhengig valgt blant halogen, C₁-C₂-alkyl og C₁-C₂-alkoksy.

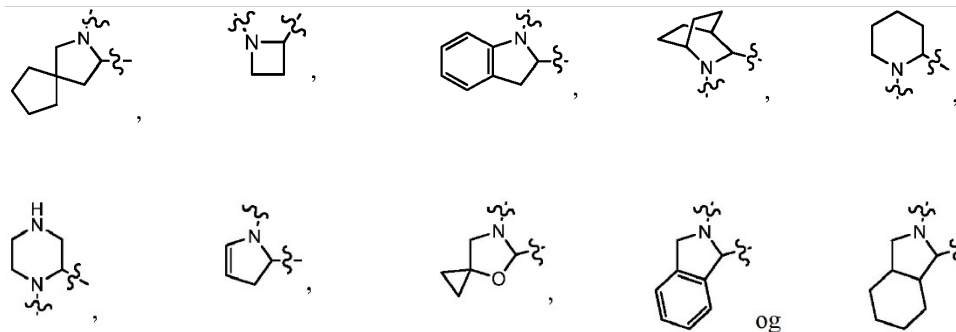
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6. Forbindelse eller salt ifølge krav 1, der hver R er uavhengig valgt blant



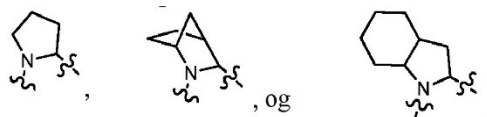
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- 4 -



5 som hver er opsjonelt substituert med én eller flere substituerer uavhengig valgt blant halogen, C₁-C₄-alkyl og C₁-C₄-alkoksy.

7. Forbindelse eller salt ifølge krav 6, der hver R er uavhengig valgt blant



- 10 8. Forbindelse eller salt ifølge krav 1, der T er uavhengig valgt blant C₂-C₆-alkanoyl substituert med mono- og di-C₁-C₆-alkylkarbamat, der hver T er opsjonelt substituert med (C₁-C₄-tioalkyl)C₀-C₄-alkyl.

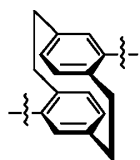
9. Forbindelse eller salt ifølge krav 1, på formelen

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der

A er en gruppe på formelen



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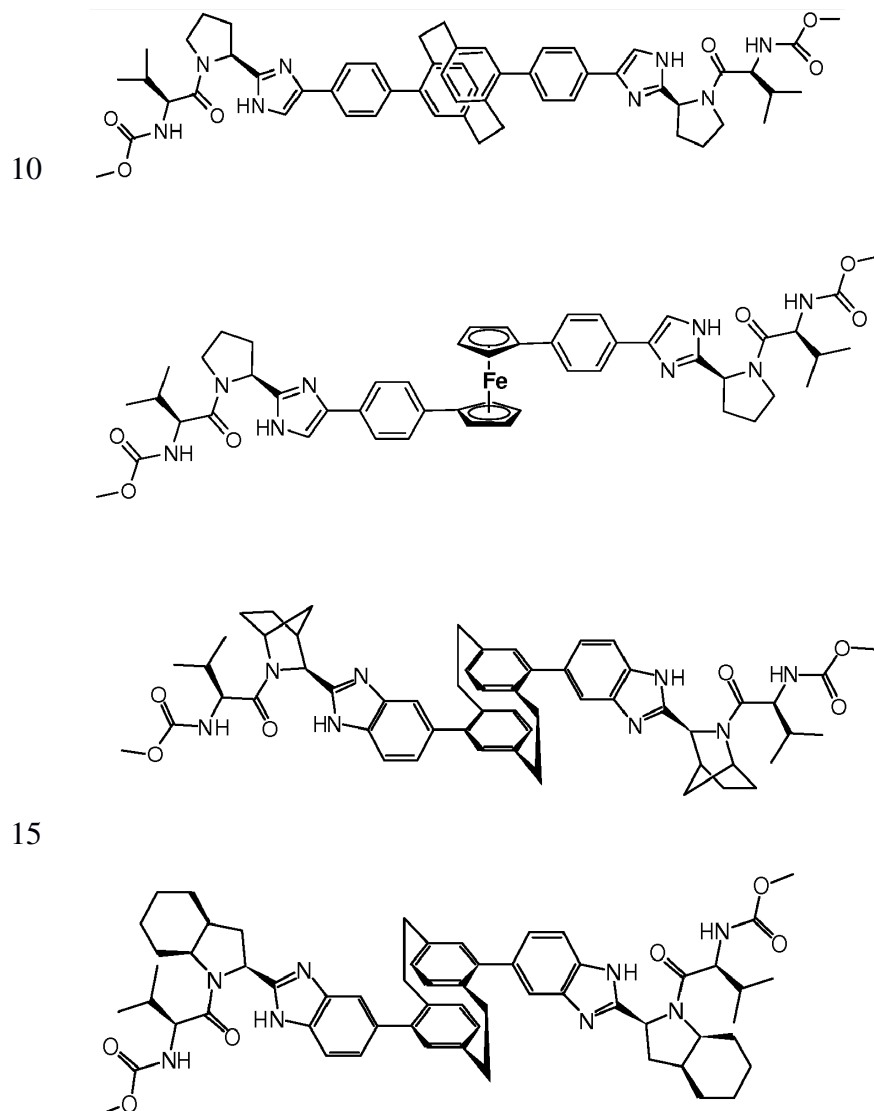
J² er en 8- til 10-leddet heteroarylgruppe som inneholder 1 til 2 heteroatomer uavhengig valgt blant N, O og S, der J² er opsjonelt substituert med én eller flere substituerer uavhengig valgt blant amino, cyan, hydroksyl, halogen, C₁-C₄-alkyl, C₁-C₄-alkoksy, mono- og di-C₁-C₄-alkylamino, C₁-C₂-haloalkyl og C₁-C₂-haloalkoksy;

- 5 -

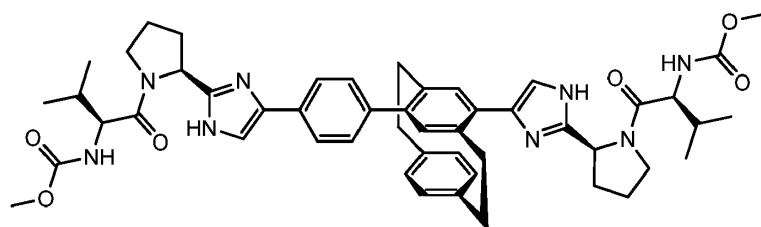
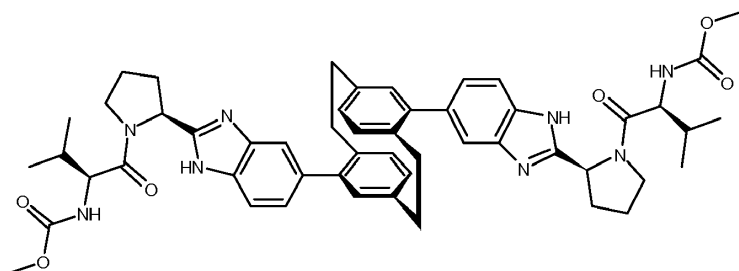
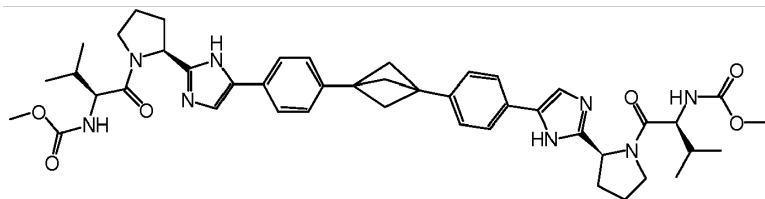
Hver R er et uavhengig valgt 8- til 10-leddet bisyklisk ringsystem som inneholder ett eller to nitrogenatomer, der resterende ringatomer er karbon, der den 8- til 10-leddede bisykliske ringen er mettet eller inneholder 1 umettet binding;

- hver R er opsjonelt substituert med én eller flere substituenten uavhengig valgt blant cyan, hydroksyl, halogen, C₁-C₂-alkyl, C₁-C₂-alkoksy, C₁-C₂-haloalkyl, C₁-C₂-haloalkyl, C₁-C₂-haloalkylen og C₁-C₂-alkylsulfonyl; og
 5 T er T².

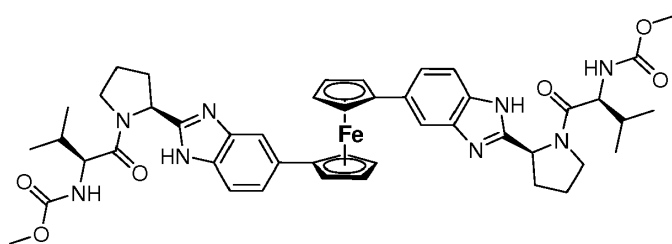
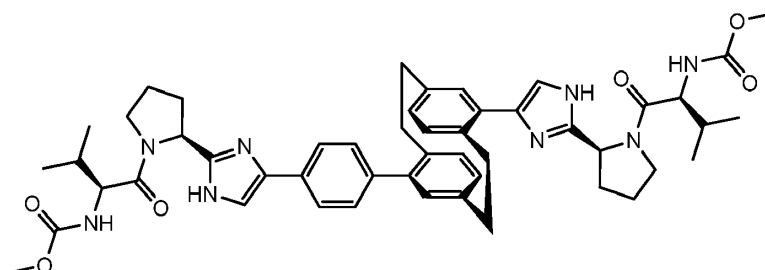
10. Forbindelse eller salt ifølge krav 1, der forbindelsen er valgt blant følgende gruppe:



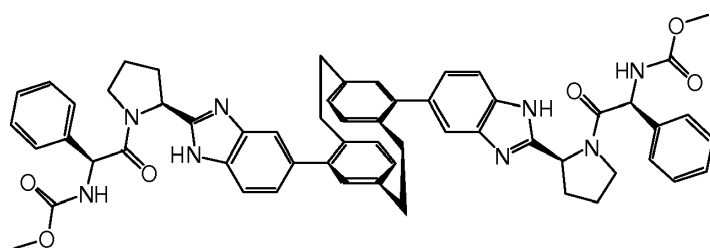
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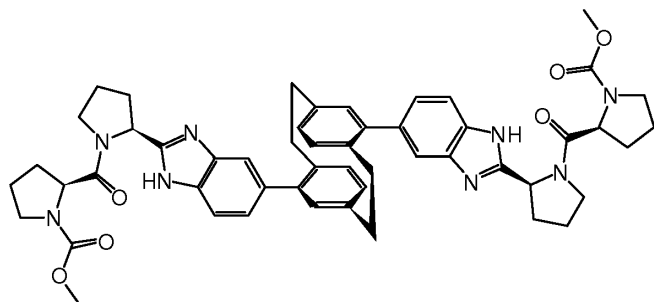
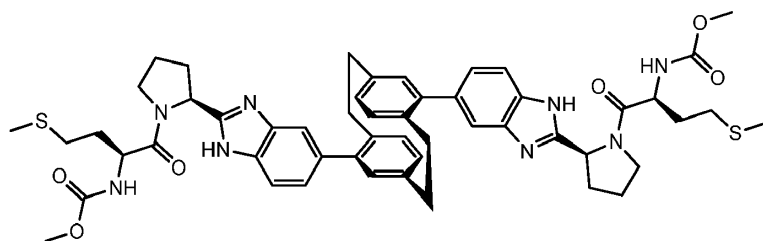


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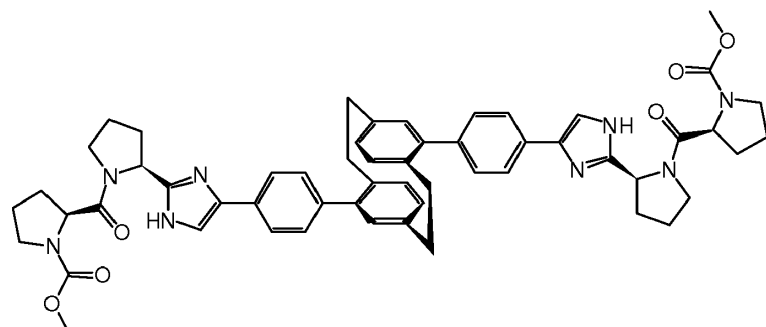
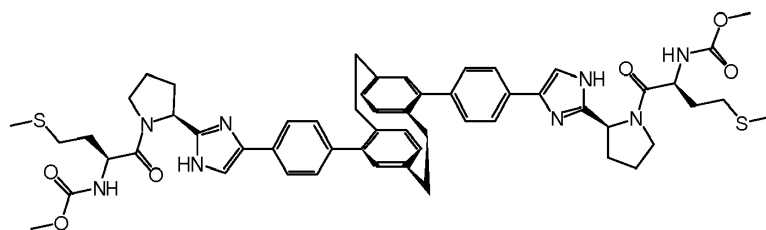
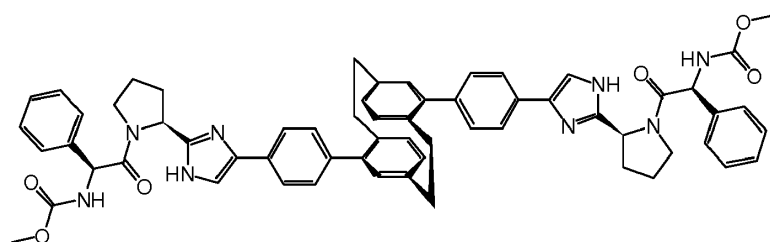


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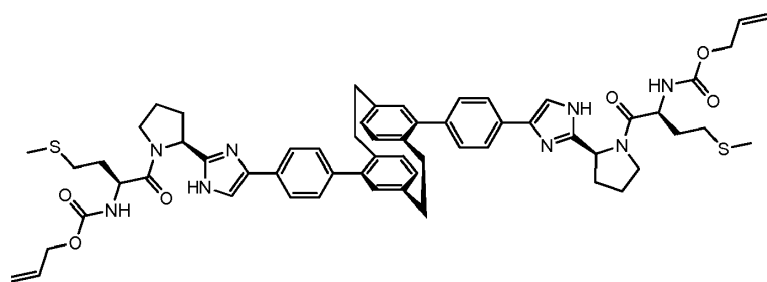
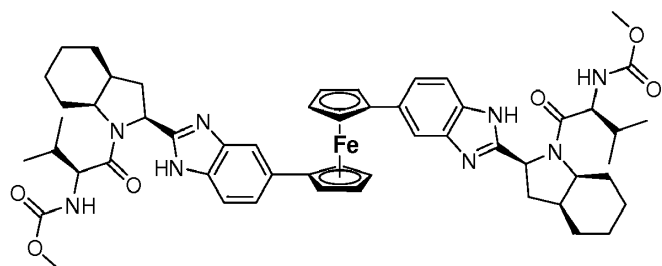
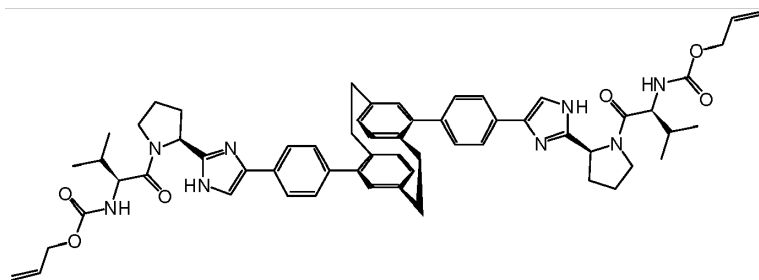




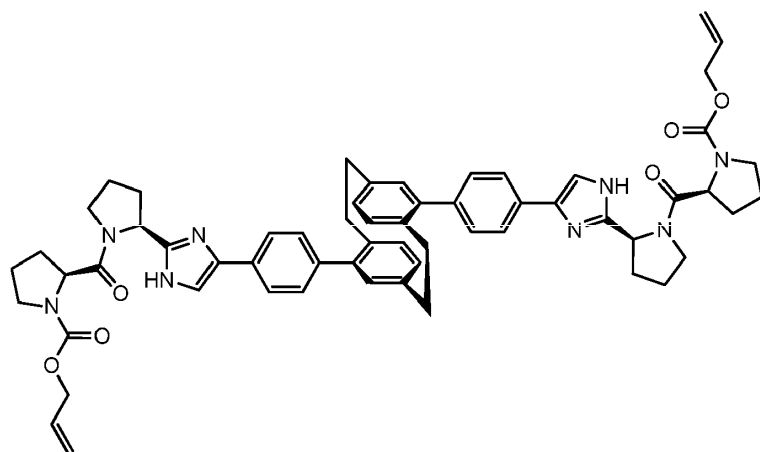
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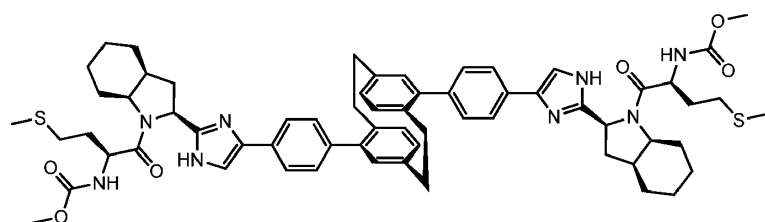
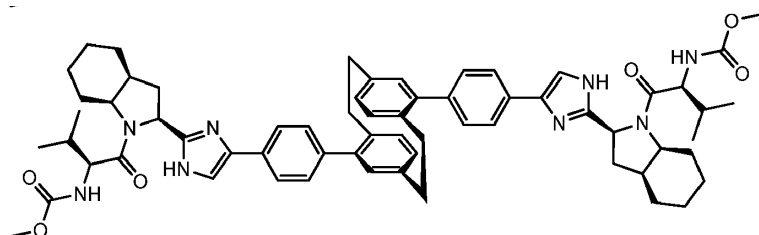
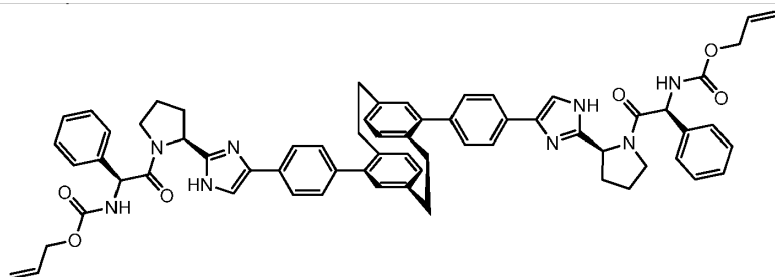


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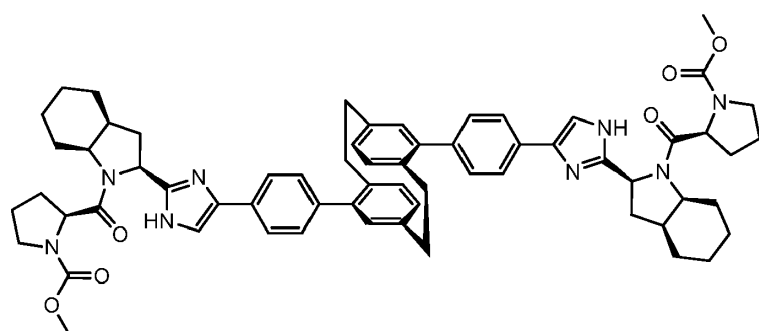
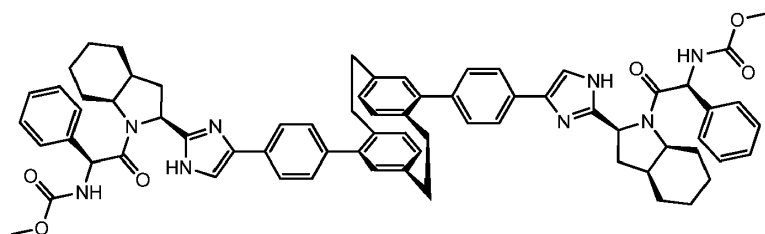


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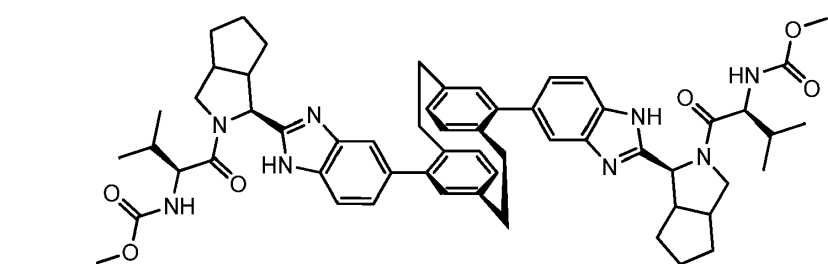
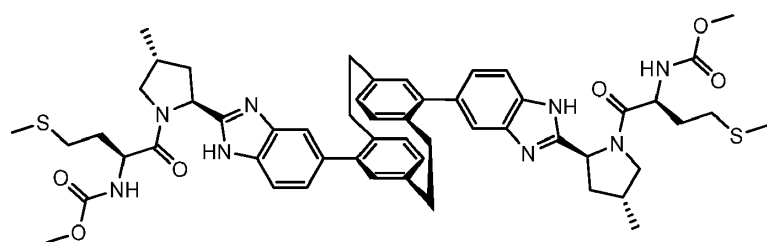
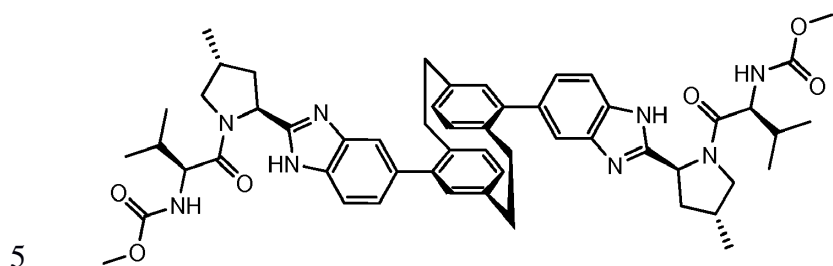
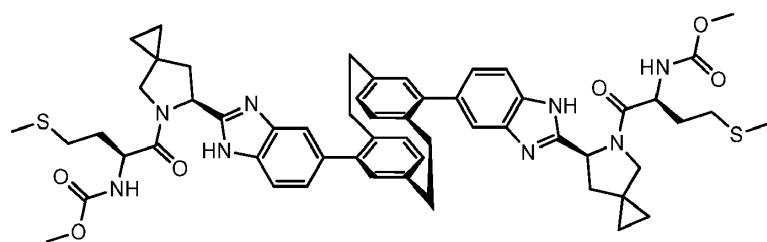
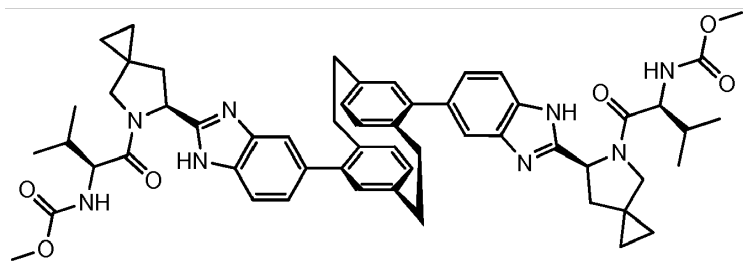


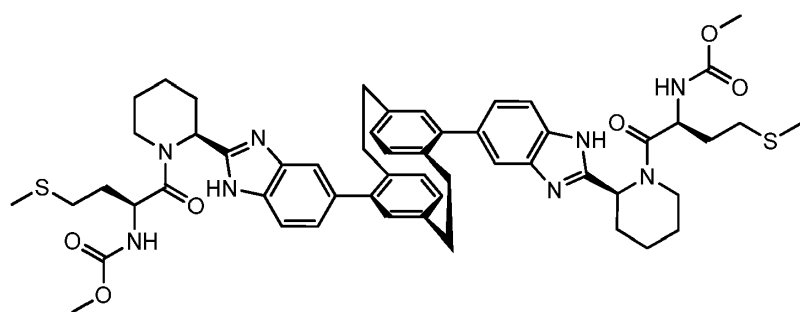
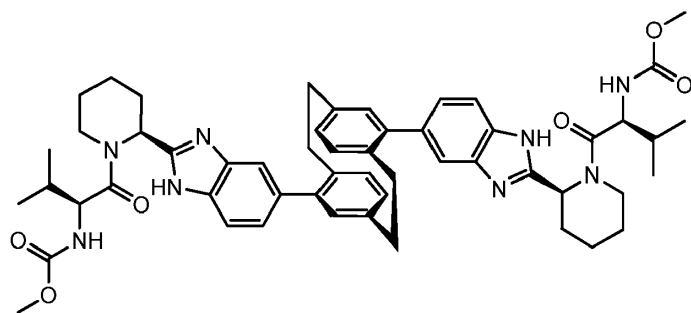
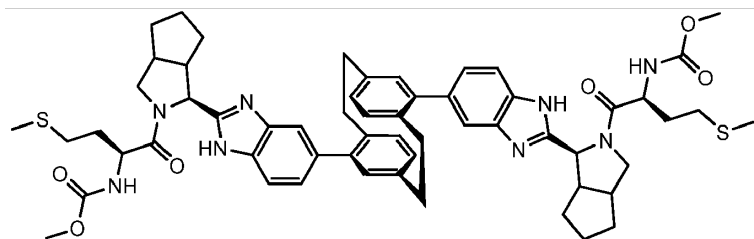
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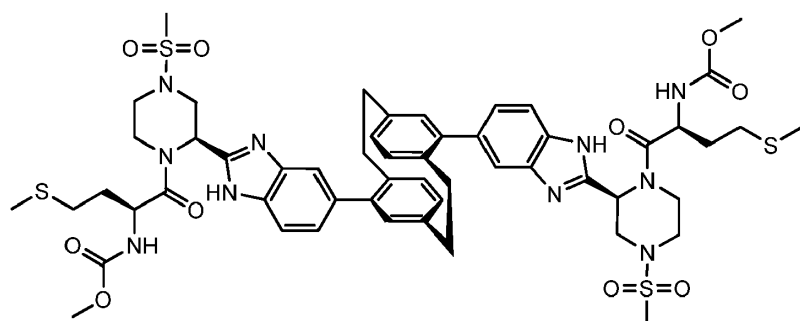
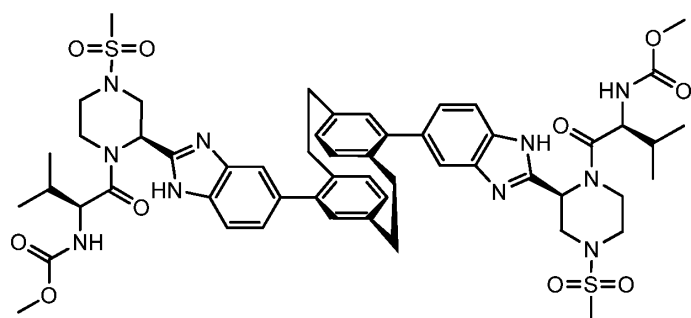
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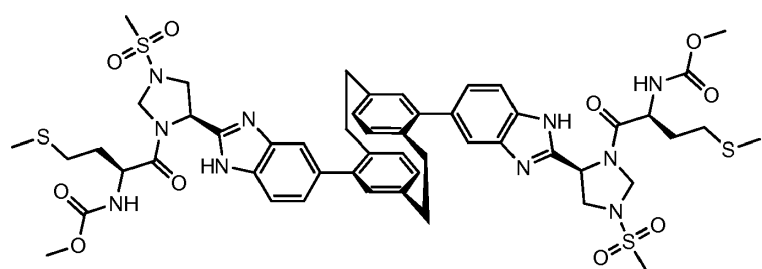
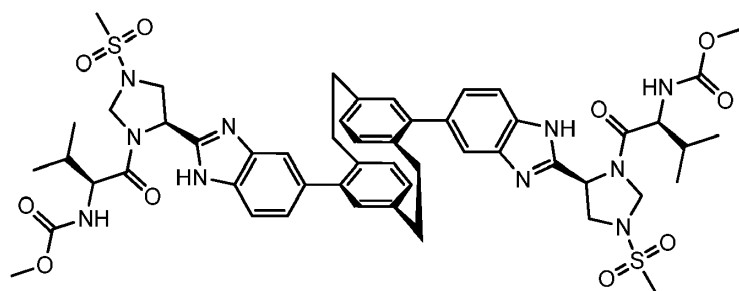




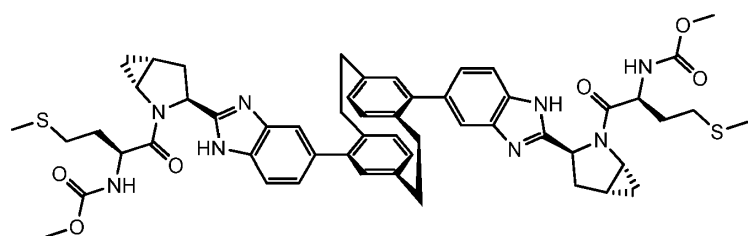
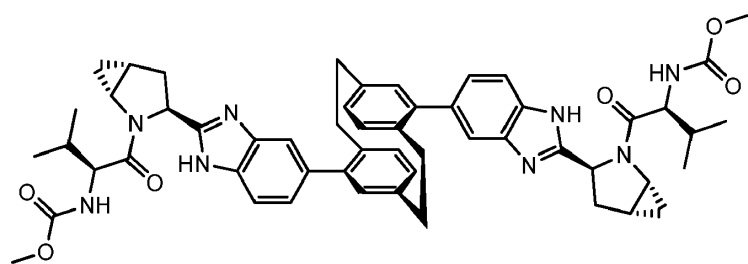
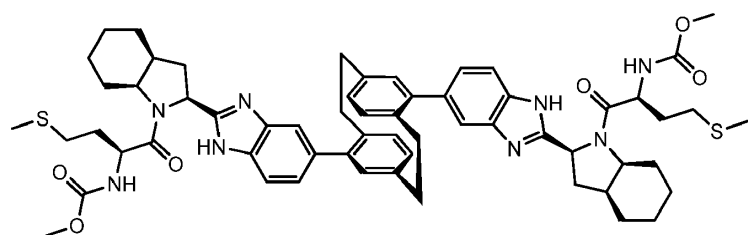
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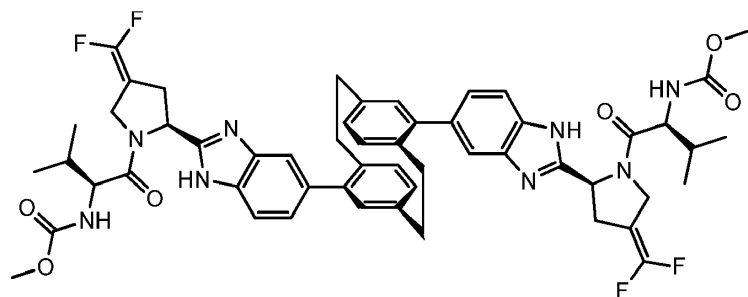
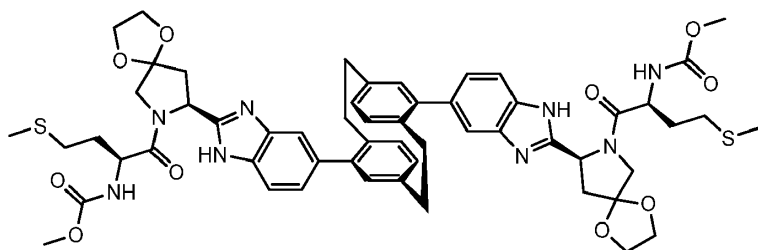
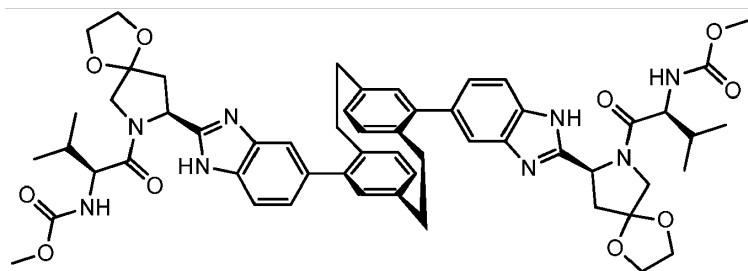


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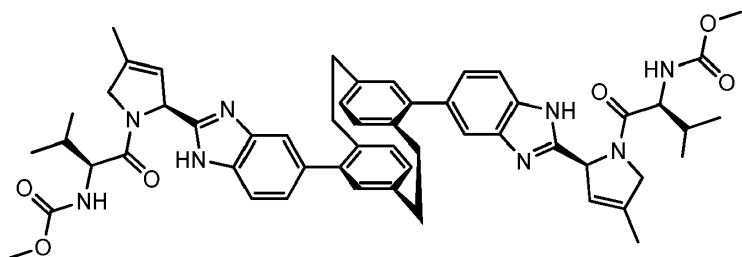
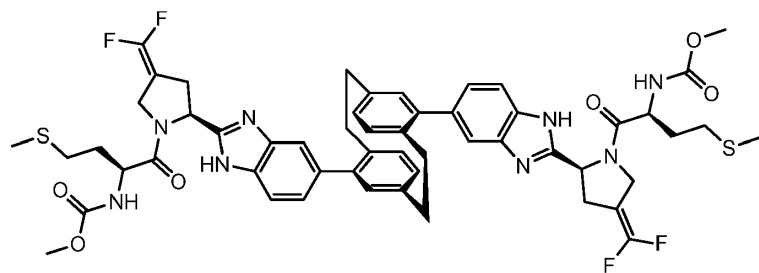


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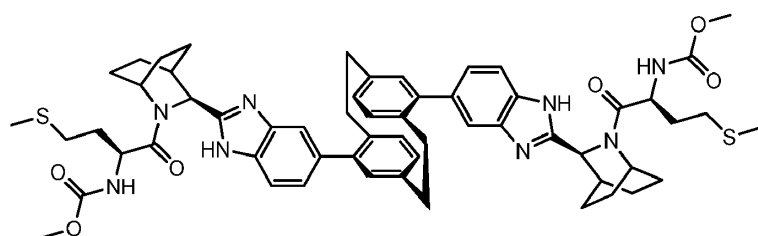
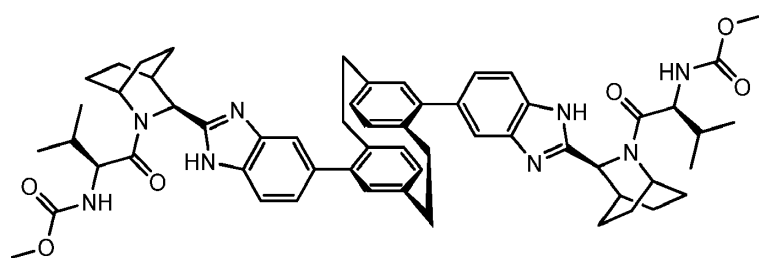
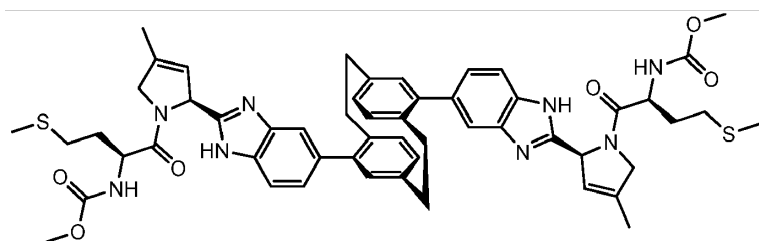
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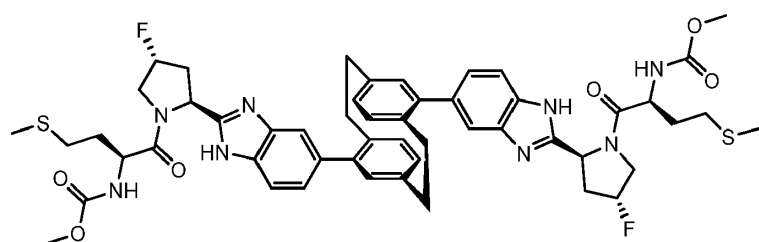
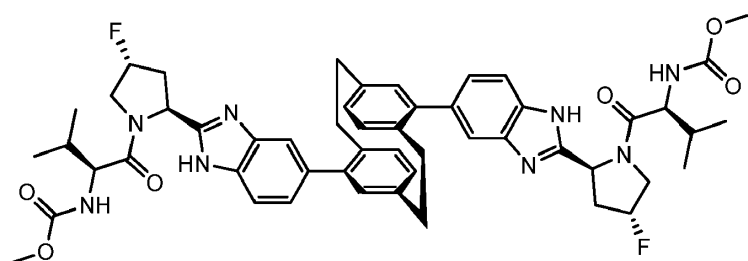
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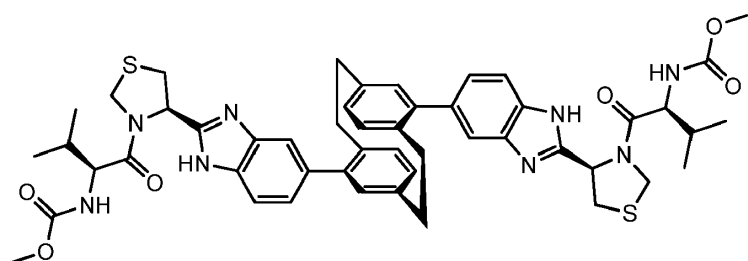
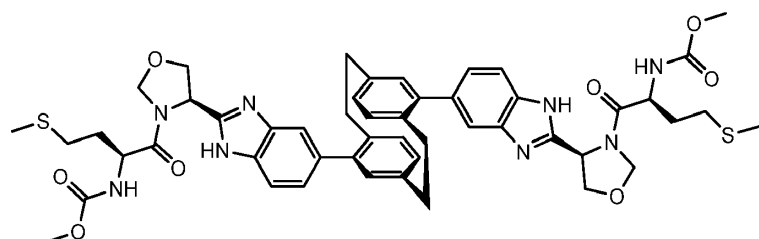
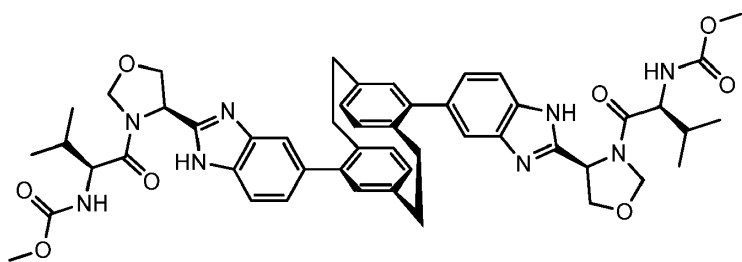
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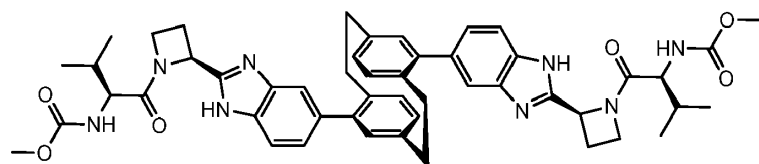
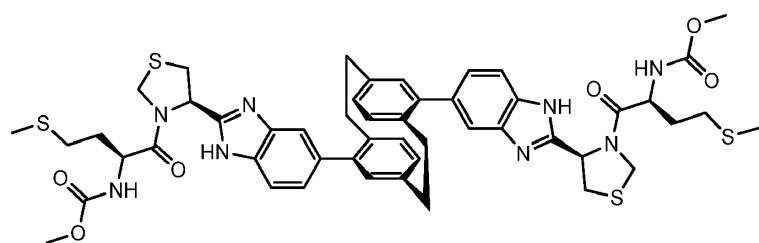
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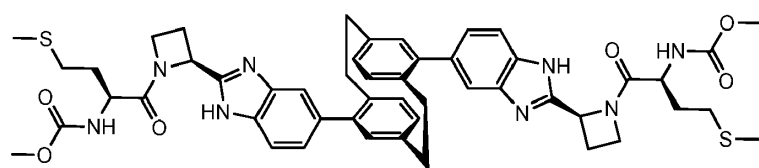
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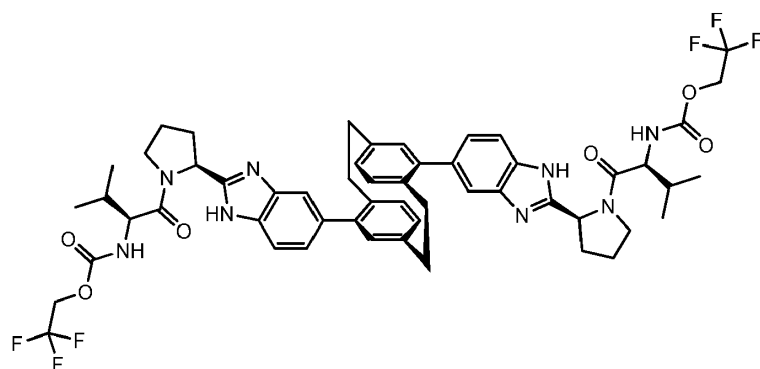
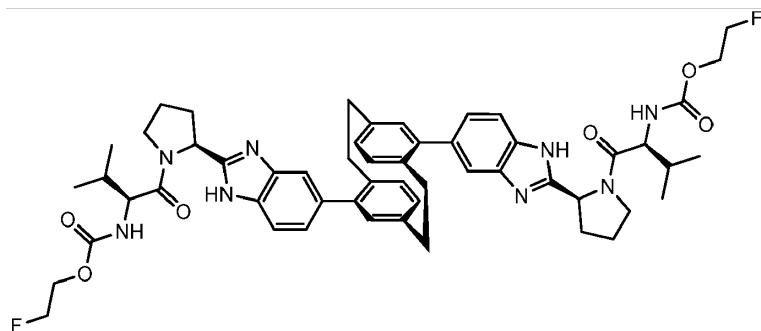
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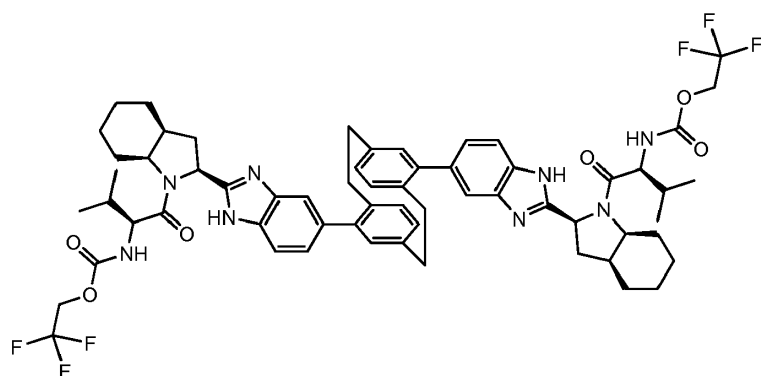
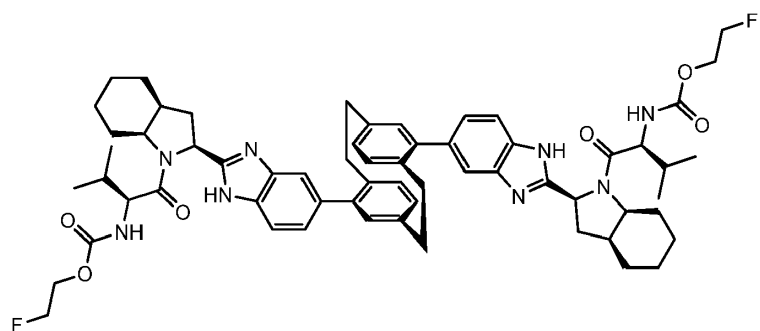
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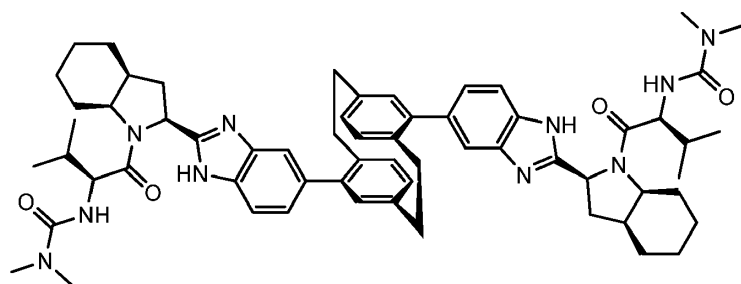
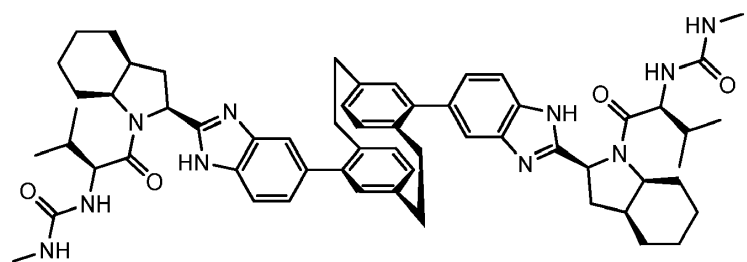
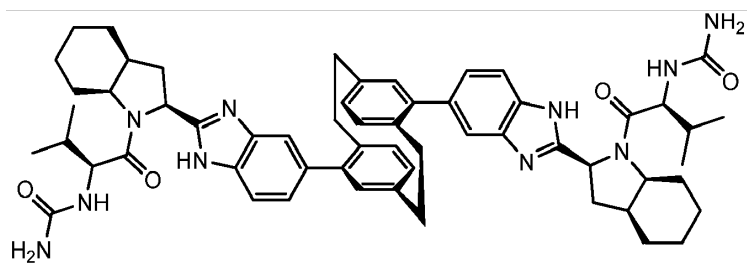
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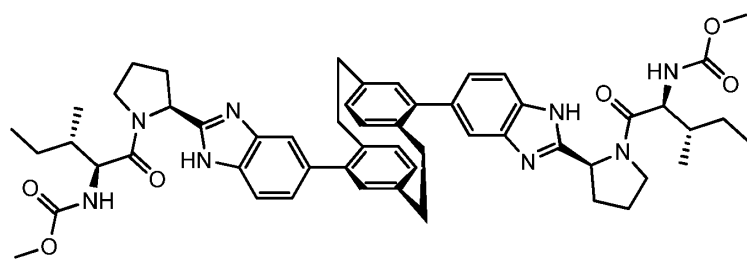
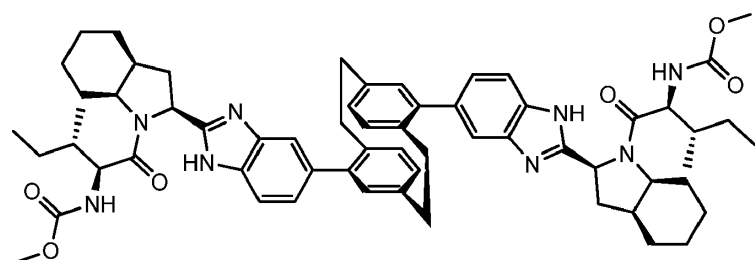
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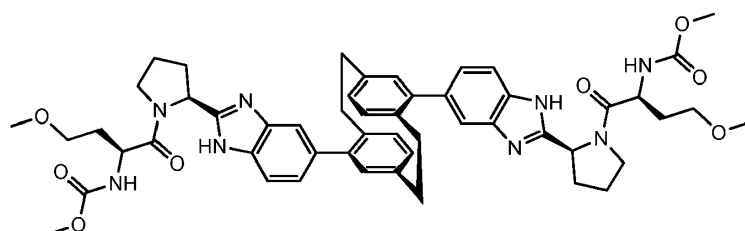
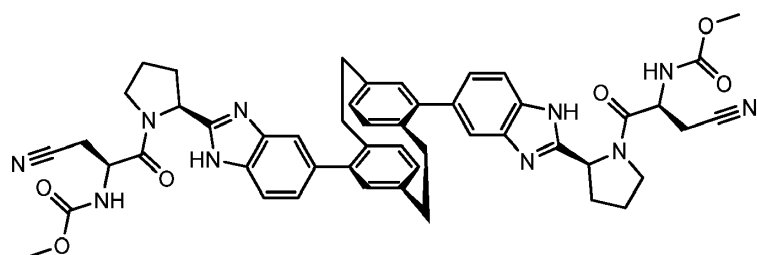
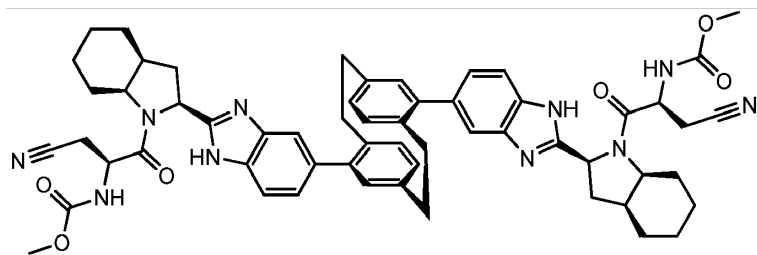
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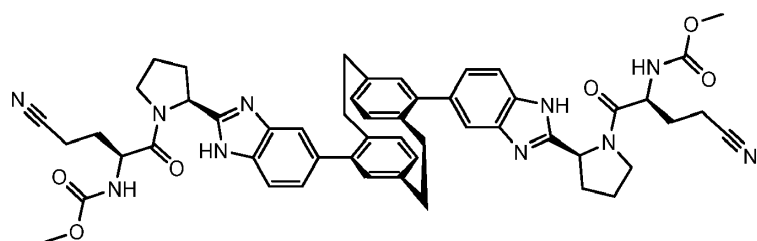
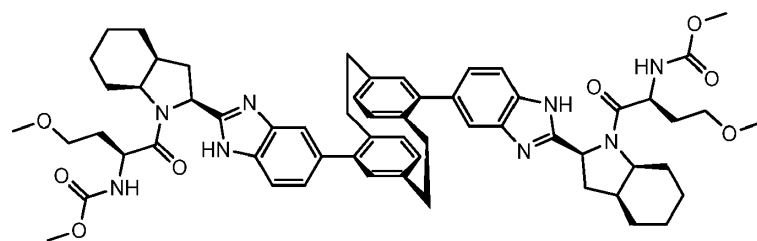
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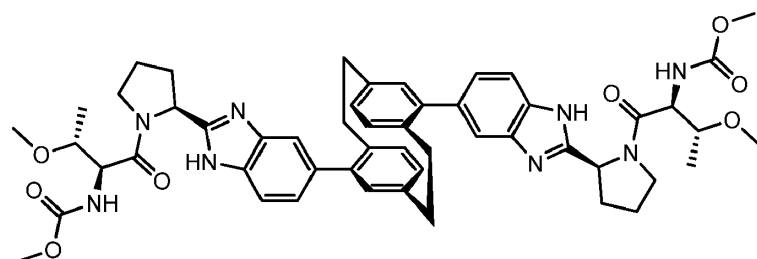
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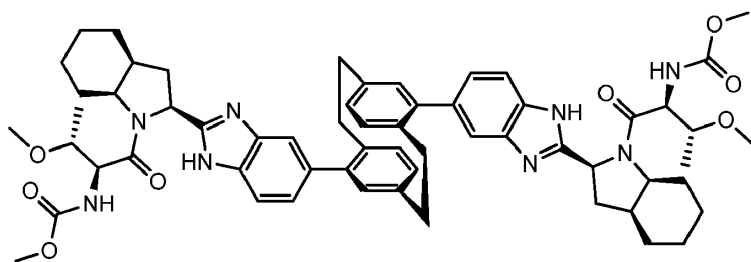
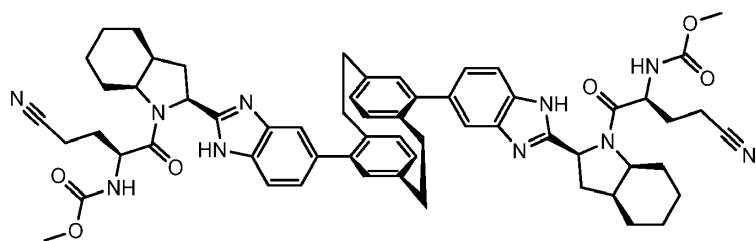
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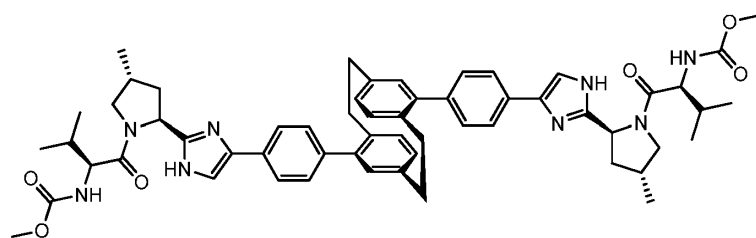
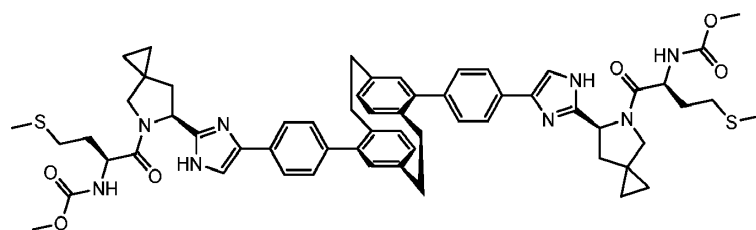
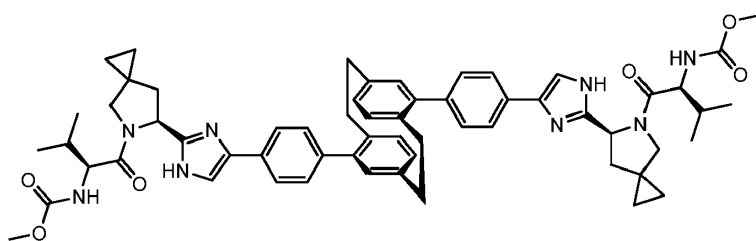
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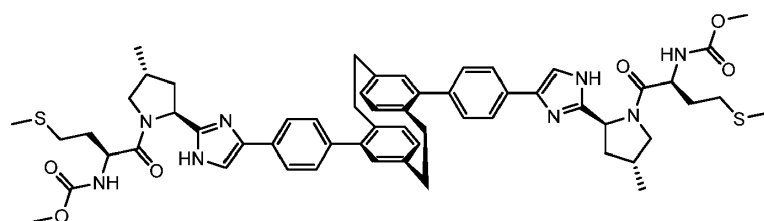
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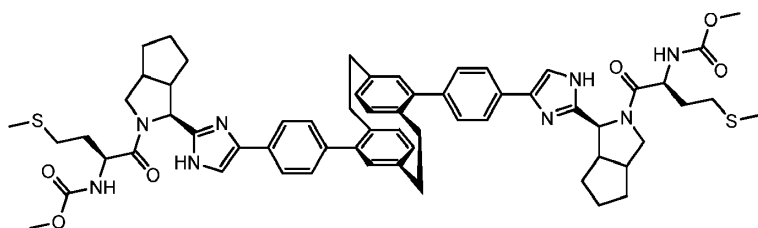
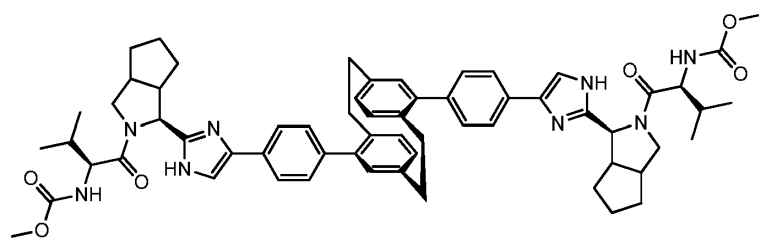
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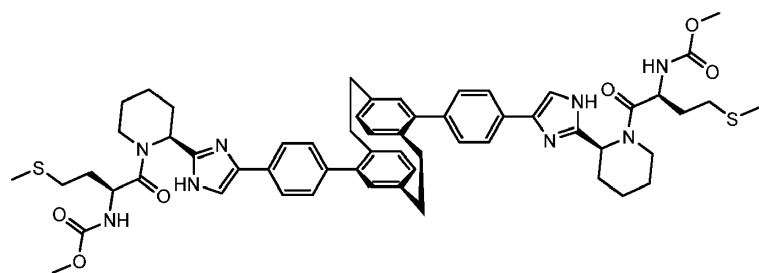
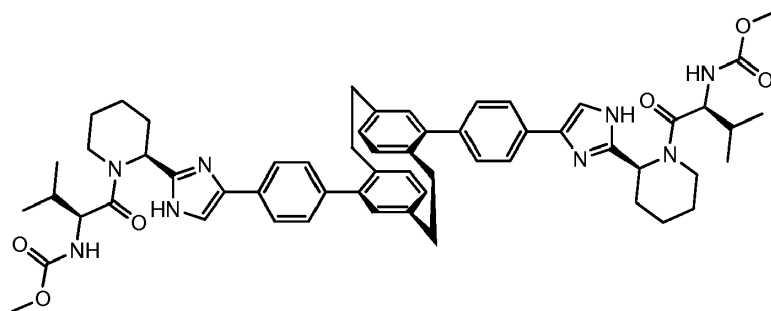
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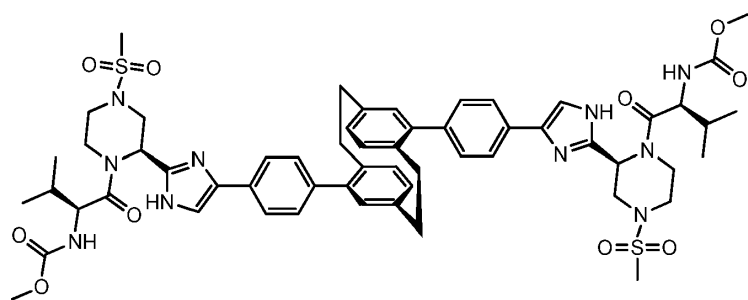
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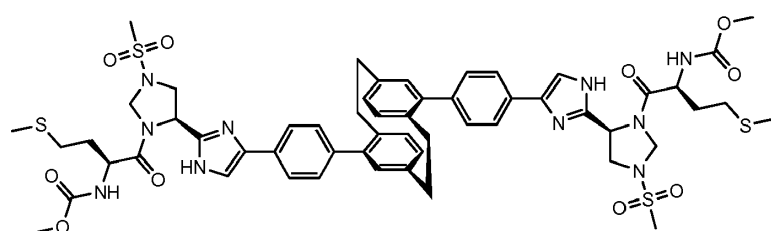
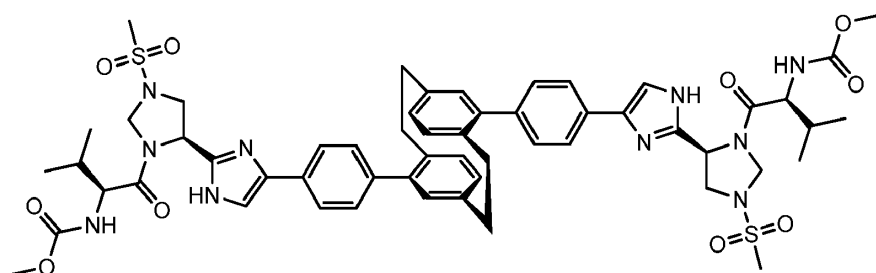
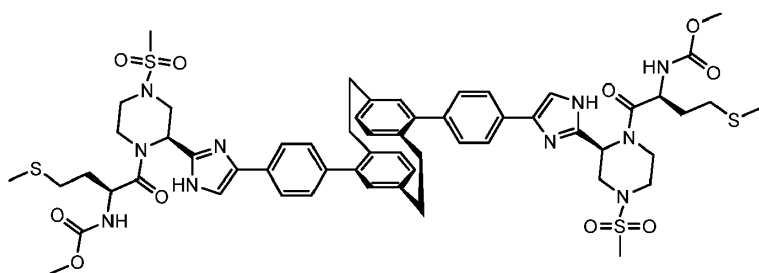


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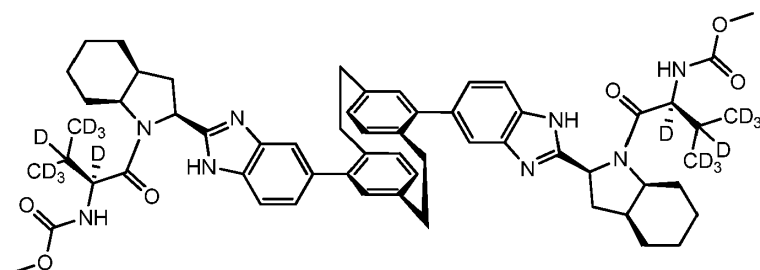
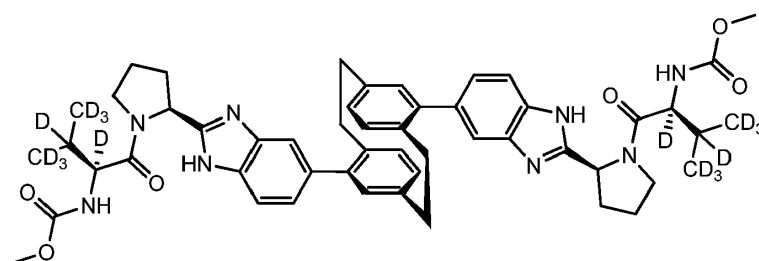


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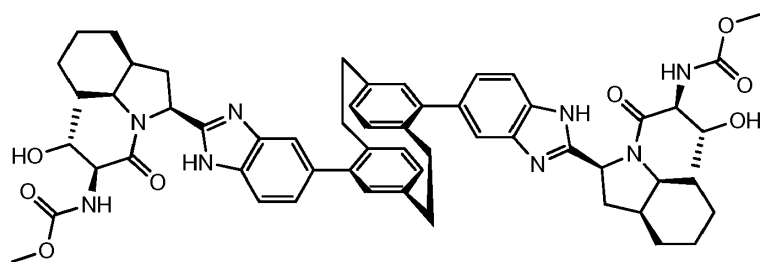
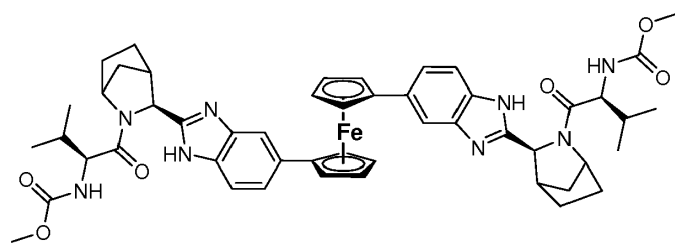
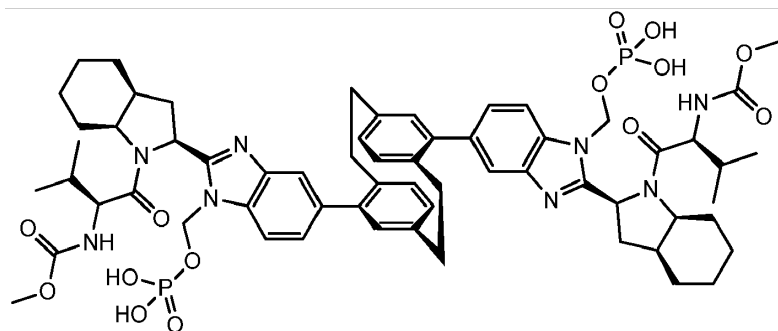


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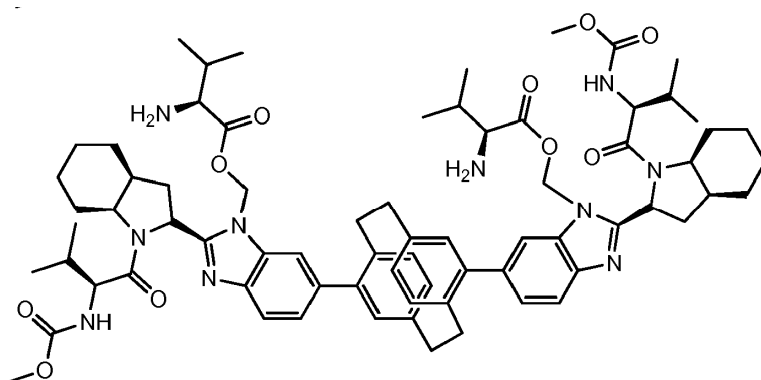
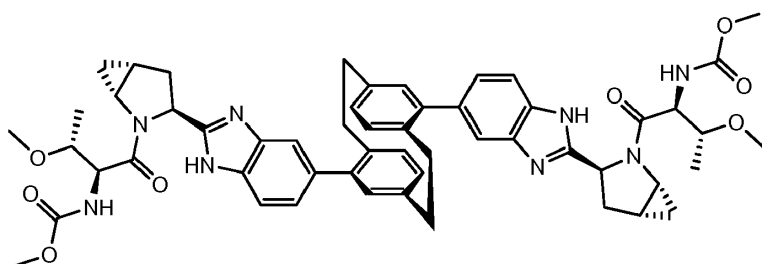


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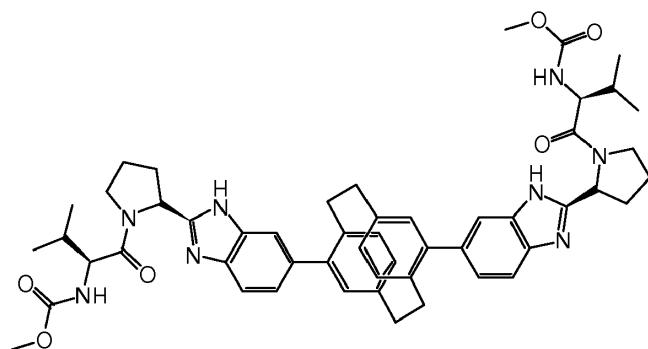
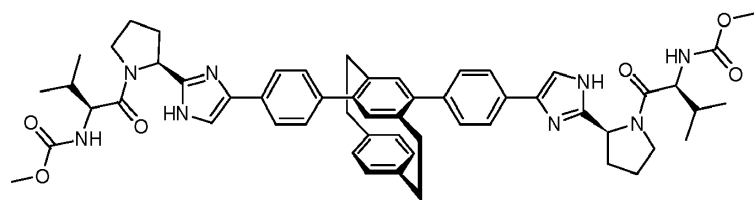
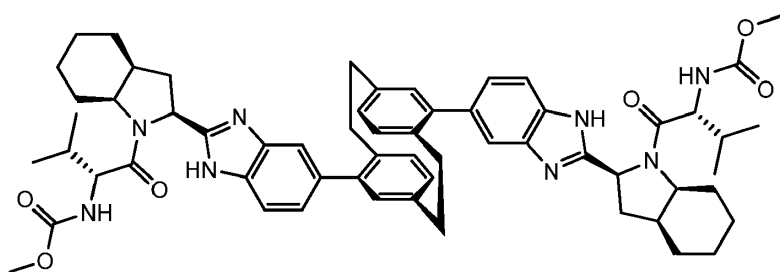
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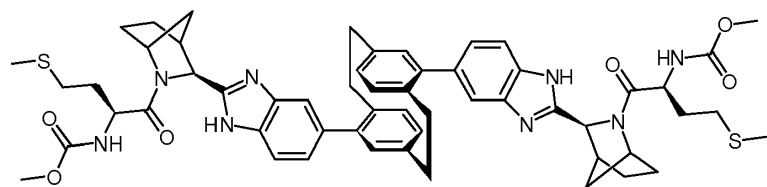
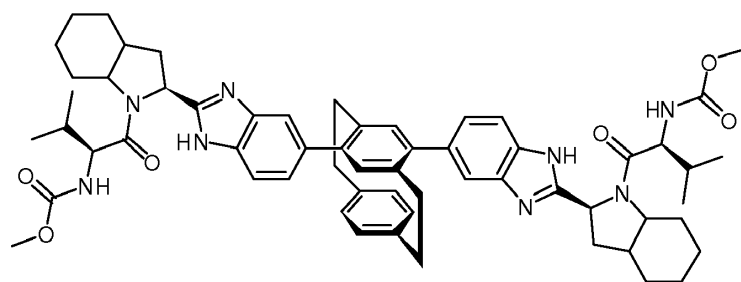
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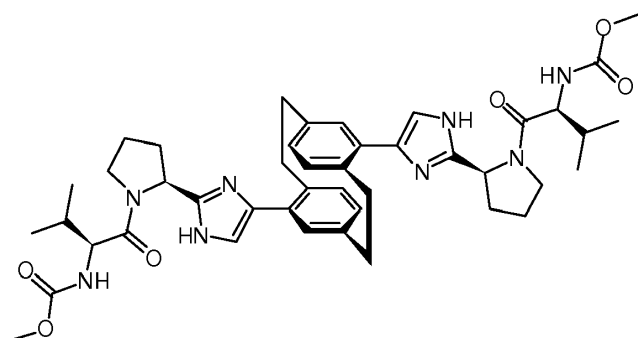
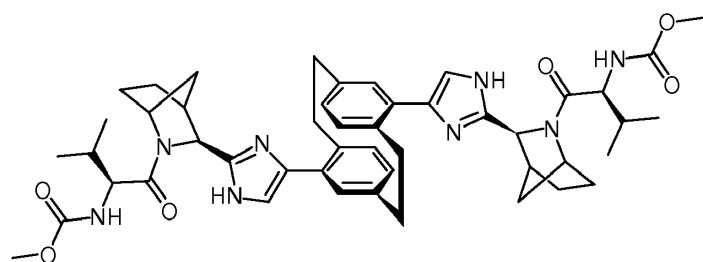
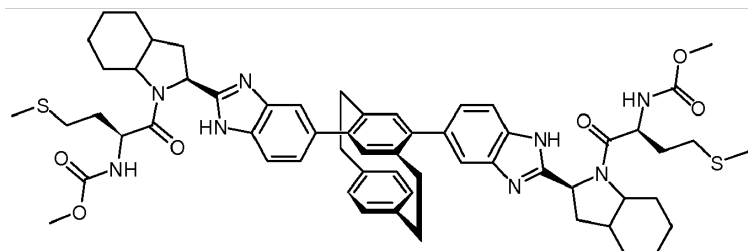
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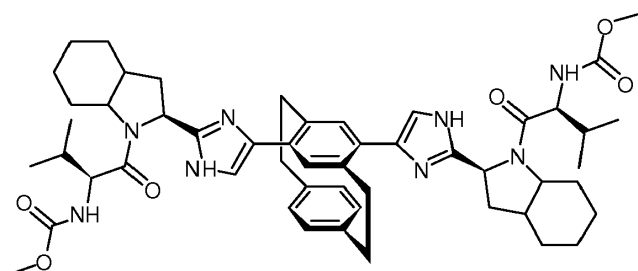
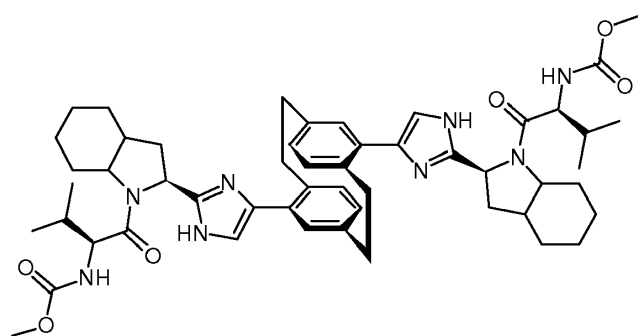
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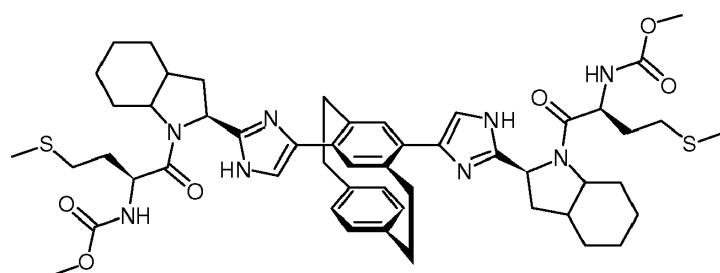
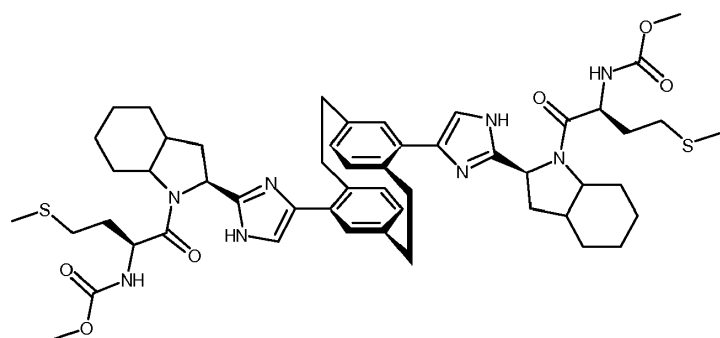
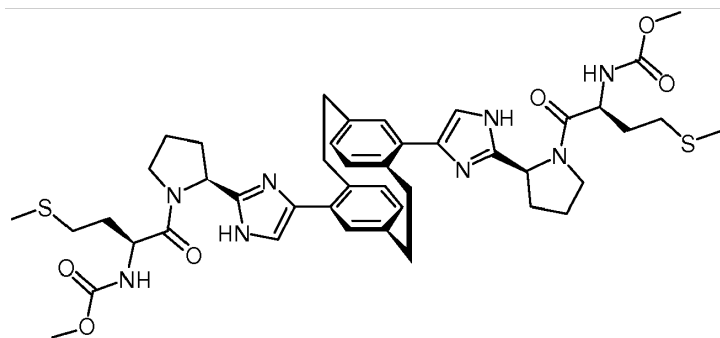


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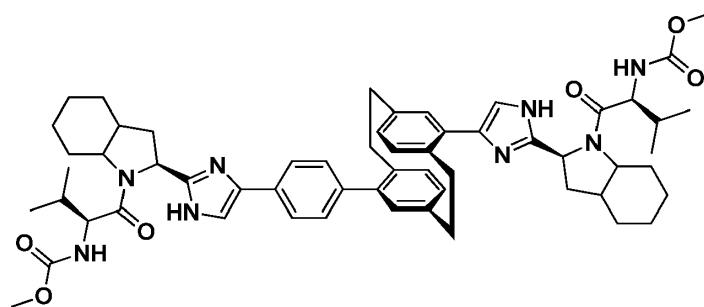
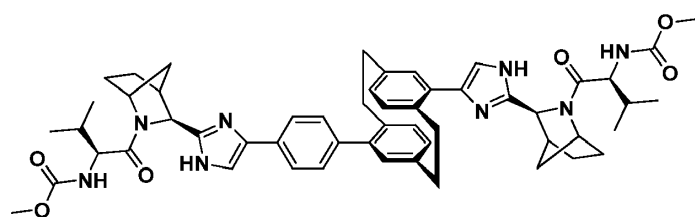


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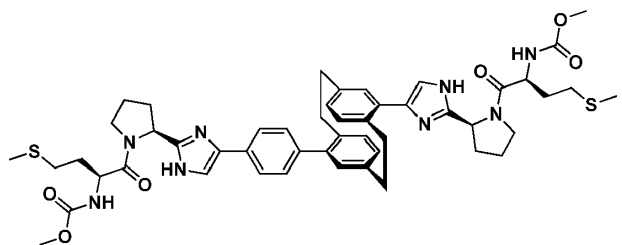
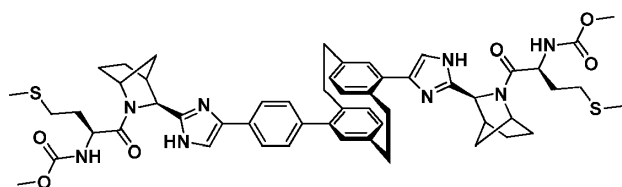
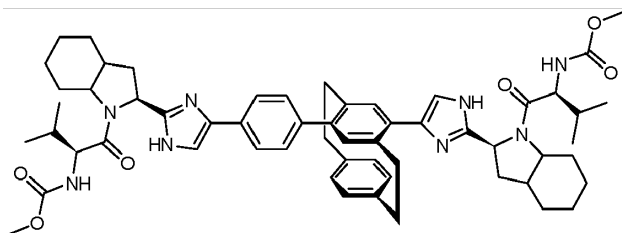


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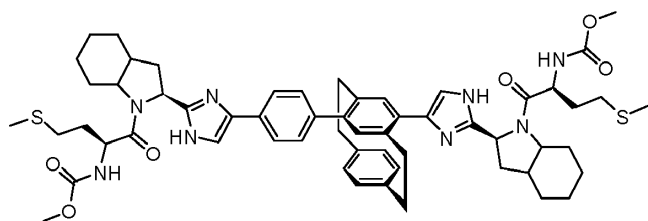
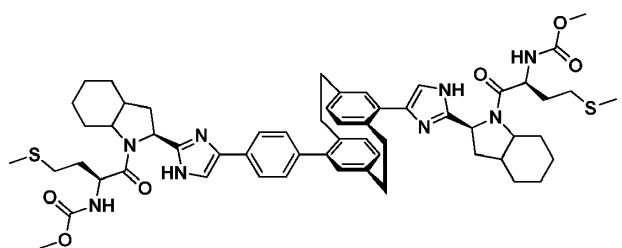


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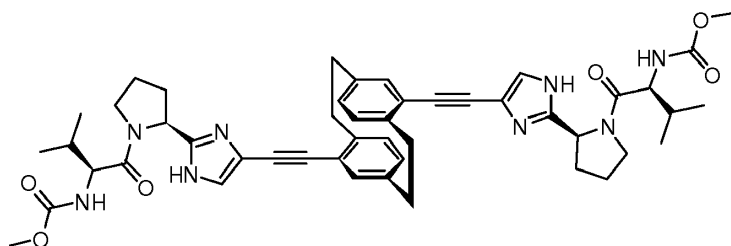
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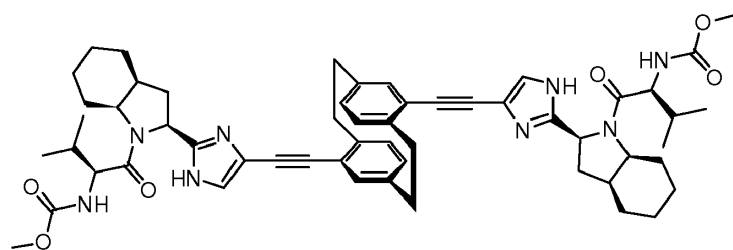
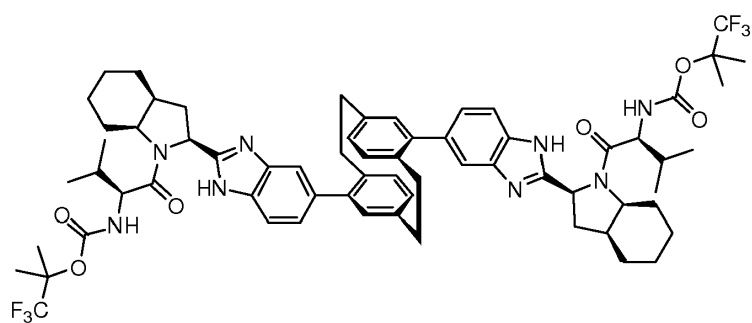
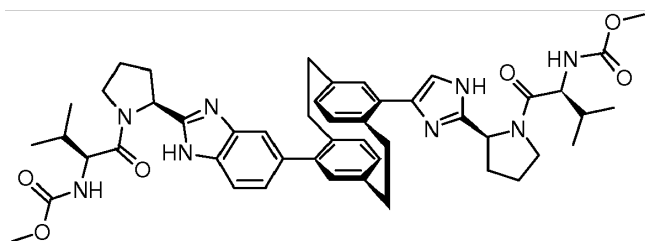
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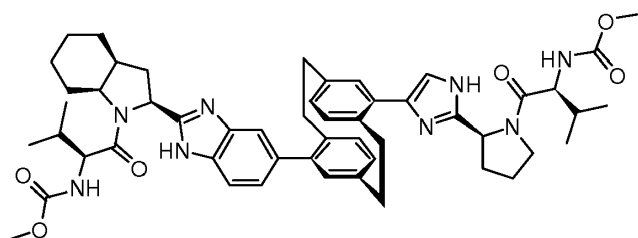
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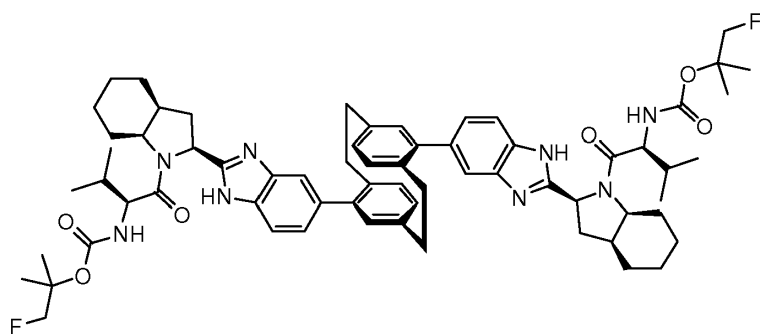
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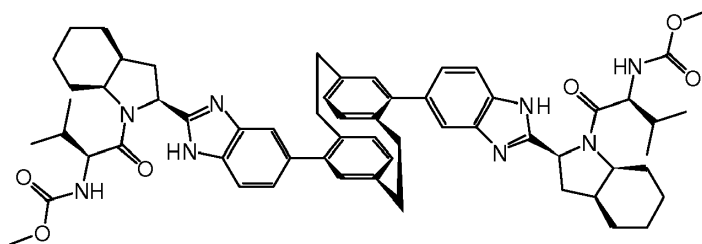
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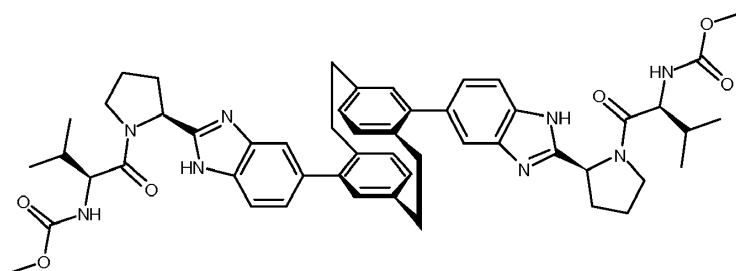
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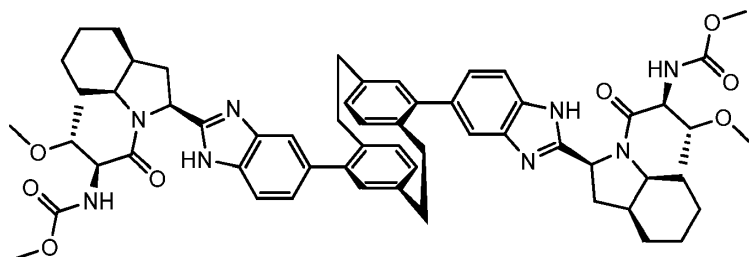
11. Forbindelse eller salt ifølge krav 1, på formelen:



5 12. Forbindelse eller salt ifølge krav 1, på formelen:

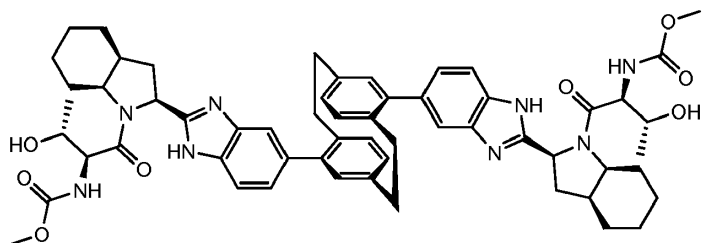


13. Forbindelse eller salt ifølge krav 1, på formelen:



10

14. Forbindelse eller salt ifølge krav 1, på formelen:



15

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15. Farmasøytisk sammensetning som omfatter en forbindelse eller et salt ifølge et av de foregående kravene sammen med en farmasøytisk akseptabel bærer.

5 16. Farmasøytisk sammensetning ifølge krav 15, der sammensetningen omfatter minst ett ekstra virkestoff.

17. Forbindelse eller salt ifølge et av kravene 1 til 14, eller en farmasøytisk sammensetning ifølge krav 15 eller krav 16, til bruk i en framgangsmåte for å behandle hepatitt C-infeksjon.