

Doctor

José Luis Salazar

Director de Nuevas Creaciones (C)

SUPERINTENDENCIA DE INDUSTRIA Y C

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D.

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO



No. 10-098657- -00007-0000

Fecha: 2013-02-18 16:46:42 Dep. 2020 DIR.NUEVASCR
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Act. 444 RESPUESTAREQUE Folios: 56

Referencia: Expediente No. 10.098.657

Solicitud de Patente de Invención titulada: "Compuestos tricíclicos
sustituidos fusionados inhibidores del virus de la hepatitis C".

Solicitante: Bristol-Myers Squibb Company

RESPUESTA AL AUTO NOTIFICADO POR FIJACIÓN EN LISTA NO. 440
DEL 9 DE OCTUBRE DE 2012, OFICIO NO. 17943 (EXAMEN DE FONDO)

ÁLVARO CORREA ORDÓÑEZ, mayor de edad y vecino de Bogotá D.C., identificado tal como aparece al pie de mi firma, en mi carácter de apoderado de la sociedad en referencia, doy respuesta al auto emanado por ese Despacho dentro del término de prórroga solicitado en mi memorial 10-098657-00006-0000 de fecha 4 de enero de 2013:

1. Objeciones del Examinador

1.1 Excepción a la patentabilidad

Su Despacho establece que las reivindicaciones 15-18 que hacen referencia a métodos de tratamiento, no son patentables.

1.2 Claridad de las reivindicaciones

Su Despacho afirma que la reivindicación 1 no es concisa porque presenta una excesiva complejidad, lo cual dificulta determinar la extensión del objeto que se busca proteger, debido a los términos "alcoxicarbonilo", "alquilo", "arilalcoxicarbonilo", "carboxi", "haloalquilo", "trialquilosilialcoxialquilo (...) "arilalcoxi",..."cicloalquiloalquilo", "heterociclilo" (...) con los cuales se pueden presentar múltiples opciones de posibles compuestos, dificultando entender el alcance de la materia reclamada en la solicitud (...)

Su Despacho sugiere al solicitante restringir la solicitud a una razonable generalización del tipo de compuestos que han sido sintetizados ó probados, es decir, que se encuentran debidamente sustentados en la descripción (...).

Lo anterior aplica también para las reivindicaciones dependientes 5, 7, 8, y para las definiciones de la reivindicación 9, se sugiere realizar las aclaraciones necesarias.

Por último, su Despacho establece que la reivindicación 12 no es clara cuando menciona "porque además comprende uno o dos compuestos adicionales que tienen actividad anti-VHC" ya que el segundo o tercer agente activo está definido de manera general y no se define la combinación por sus compuestos y cantidades específicas (...) lo anterior aplica para las reivindicaciones 13 y 14.

2. Respuesta a las observaciones del examinador

2.1 Modificación a una solicitud en trámite

Con el propósito de atender a las observaciones del examinador y de conformidad con el artículo 34 de la Decisión 486, que permite al solicitante en cualquier momento del trámite presentar modificaciones a su solicitud siempre y cuando no se presente ampliación en la invención originalmente presentada, presento un nuevo pliego reivindicatorio como sustituto del anteriormente presentado, conformado por 5 reivindicaciones.

2.2 Excepción a la patentabilidad

Se cancelaron las reivindicaciones 15 a 18. De esta forma se da por superada esta observación.

2.3 Claridad de la solicitud

Se cancelaron las reivindicaciones 12-14 y con las modificaciones efectuadas al pliego reivindicatorio se cancelaron también las reivindicaciones 2, 4, 5, 6, 8 y 9.

En particular, los compuestos que ahora abarca el pliego reivindicatorio son los ejemplificados.

Teniendo en cuenta la anterior modificación, se da por superada las observaciones de falta de claridad. Es decir, el nuevo pliego reivindicatorio que se presenta cumple a cabalidad con el requisito de claridad establecido en el artículo 30 de la Decisión 486.

2.4 Determinación del Estado de la Técnica

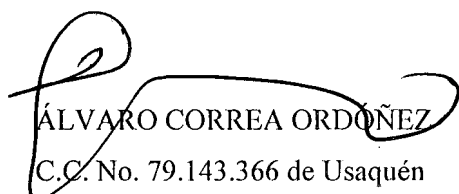
Su Despacho, establece que no se encontraron documentos que anticipen el objeto de esta solicitud. En este orden de ideas, tenemos que la invención propuesta por el solicitante cumple con los requisitos de patentabilidad y de esta manera es susceptible de ostentar el título de patente de invención.

3. Solicitudes concedidas en otros países para esta misma invención.

A manera informativa, pongo en conocimiento del Examinador que la patente EP 2 245 027 B1 equivalente a la presente solicitud colombiana ha sido otorgada. Aún cuando entiendo que estas decisiones de ninguna manera obligan al Despacho para decidir de igual forma, considero que por tratarse de una pregunta fáctica la determinación de la existencia de novedad, nivel inventivo y aplicación industrial, las decisiones de otras oficinas de patentes constituyen un antecedente persuasivo en la materia.

En virtud de lo anterior, solicito que se acepten las razones expuestas en el presente documento y en consecuencia, se otorgue el privilegio de patente de invención para el invento que se tramita en este expediente.

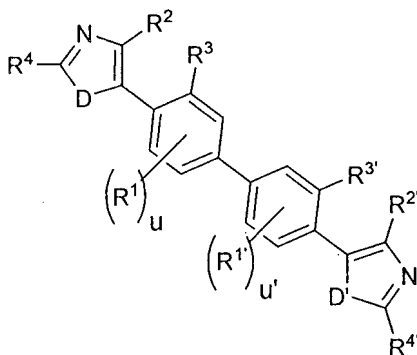
Atentamente,


ÁLVARO CORREA ORDÓÑEZ
C.C. No. 79.143.366 de Usaquén
T.P. 20.281

Anexos: - Capítulo reivindicatorio modificado conformado por 5
 reivindicaciones
 - Copia de la patente **EP 2 245 027**

REIVINDICACIONES MODIFICADAS

1. Un compuesto de fórmula (I)



5 (I),

o una de sus sales farmacéuticamente aceptables, caracterizado porque:

u y u' son independientemente 0;

D y D' son cada uno independientemente
10 seleccionados de NR⁵; en donde cada R⁵ se selecciona independientemente entre hidrógeno, hidroxilo, y trialquilsililalcoxialquilo;

R² es seleccionado entre hidrógeno y haloalquilo;

y

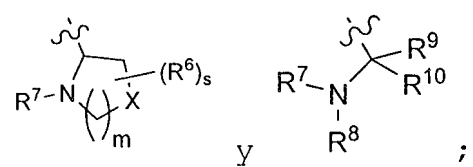
15 R³ es seleccionado entre hidrógeno y halo; o

R² y R³, junto con los átomos de carbono a los que están enlazados, forman un anillo aromático o no aromático de seis a siete miembros;

R^{2'} y R^{3'}, junto con los átomos de carbono a los
20 que están enlazados, forman un anillo aromático o no aromático opcionalmente de seis a ocho miembros que contiene un heteroátomo seleccionado independientemente de nitrógeno

y oxígeno; en donde el anillo de seis a ocho miembros está sustituido opcionalmente con uno, dos o tres sustituyentes seleccionados independientemente de alquilo C1;

5 R^4 y $R^{4'}$ son cada uno seleccionados independientemente entre



en donde

- cada m es independientemente 1;
- cada s es independientemente 0 ó 2;
- 10 cada X es CH₂;
- cada R⁶ es seleccionado independientemente entre alquilo y halo, en donde el alquilo puede opcionalmente formar un anillo condensado de tres miembros con un átomo de carbono adyacente;
- 15 cada R⁷ es R¹¹-C(O)-;
- R⁸ se selecciona entre hidrógeno y alquilo;
- R⁹ y R¹⁰ son cada uno seleccionados independientemente entre hidrógeno y alquilo; y
- cada R¹¹ se selecciona independientemente entre
- 20 alcoxycarbonilo, alquilo, arilalcoxi, arilalquilo, (NR^cR^d)alquilo.

2. Un compuesto de conformidad con la reivindicación 1, o una sal farmacéuticamente aceptable del mismo, caracterizado

25 porque cada uno de R⁵ se selecciona independientemente de

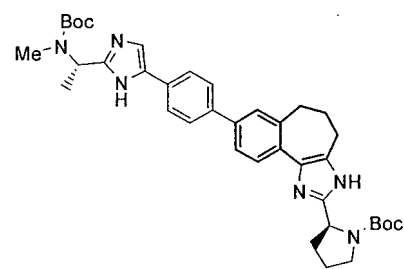
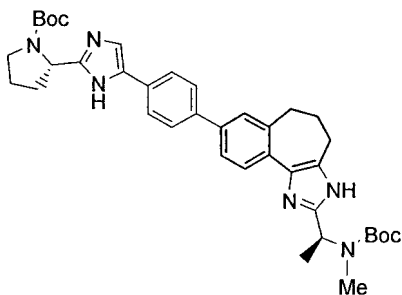
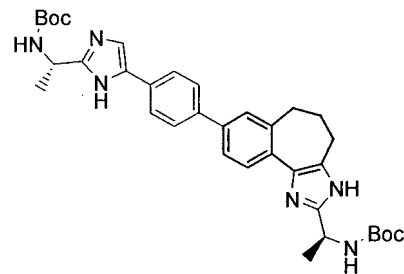
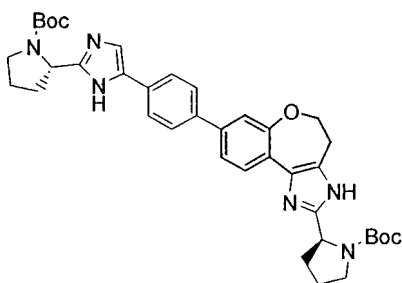
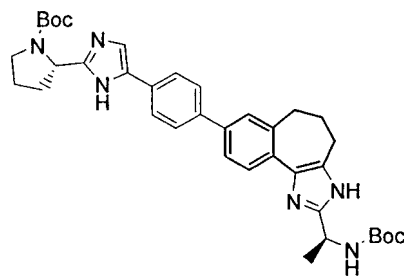
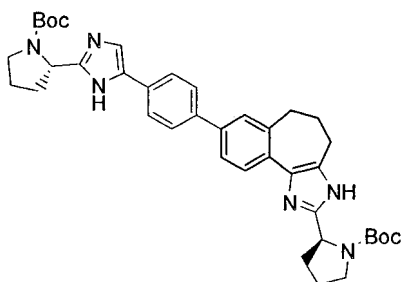
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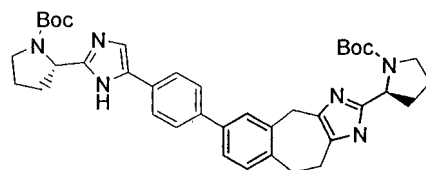
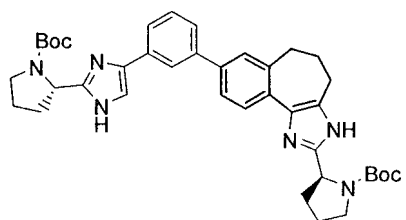
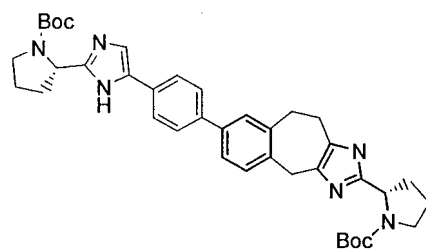
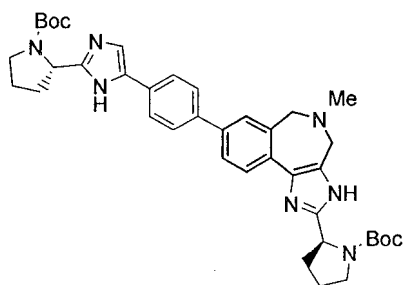
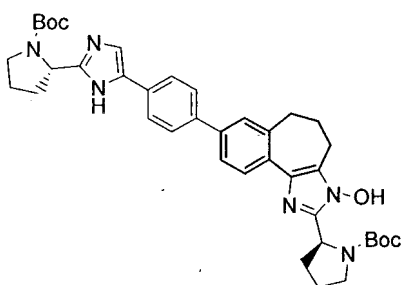
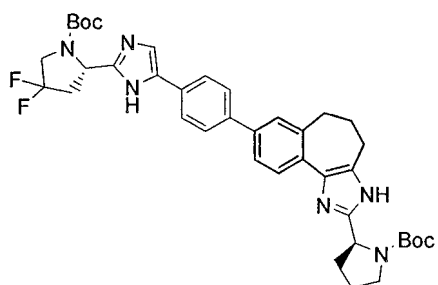
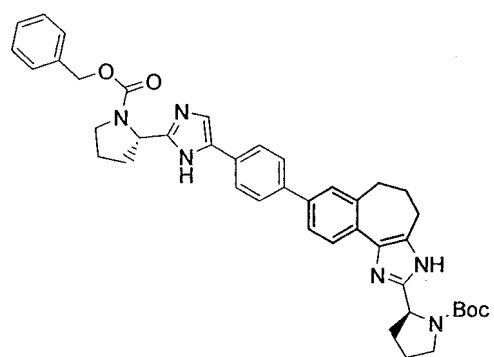
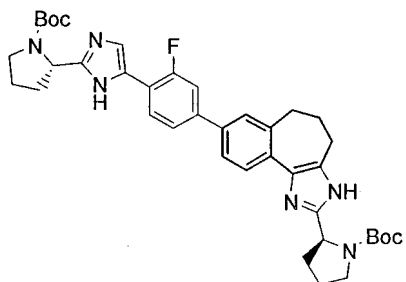
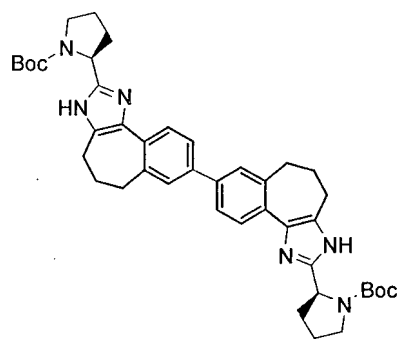
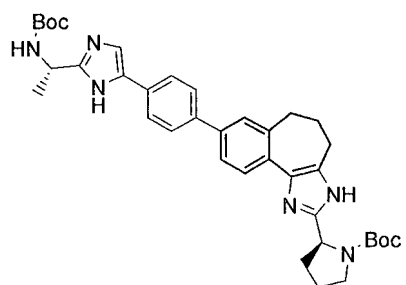
hidrógeno e hidroxí.

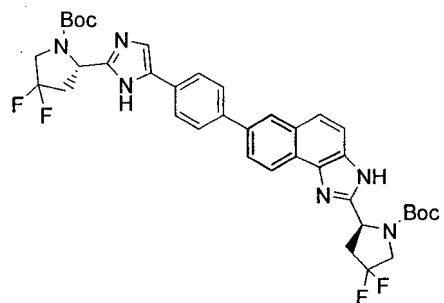
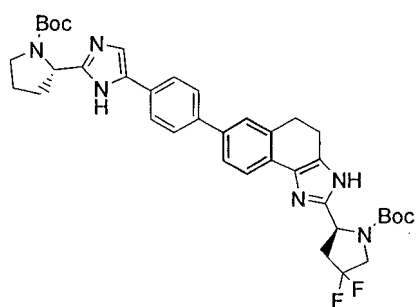
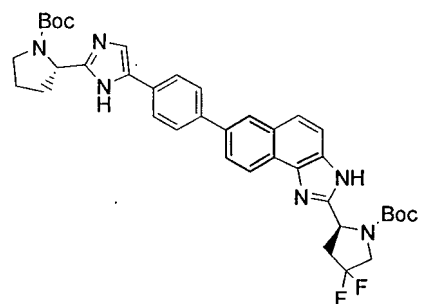
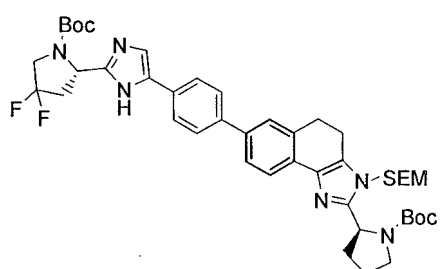
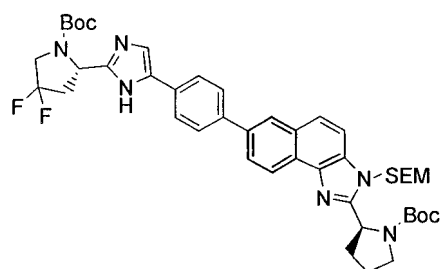
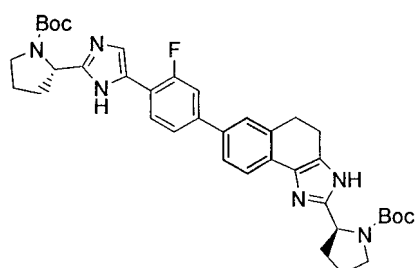
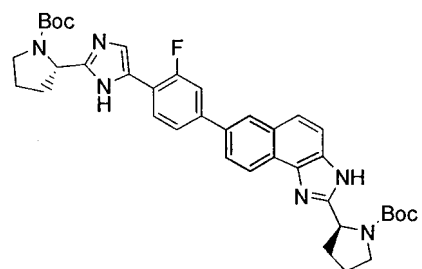
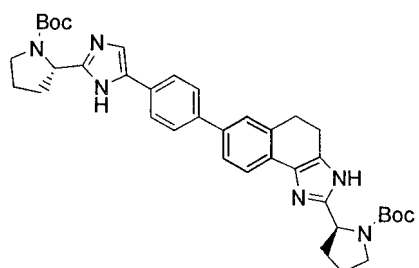
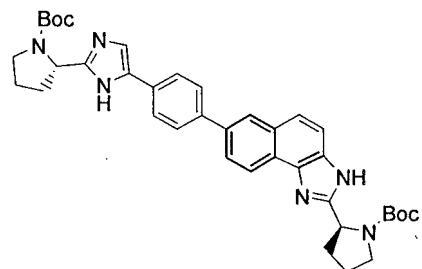
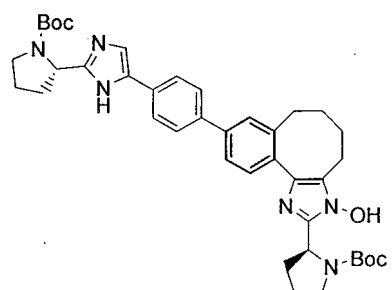
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5 porque R^2 y R^3 , junto con los átomos de carbono a los que están
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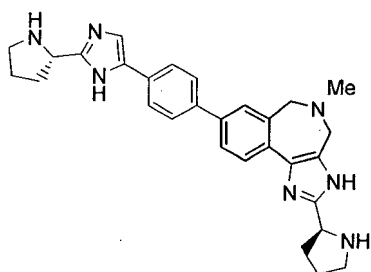
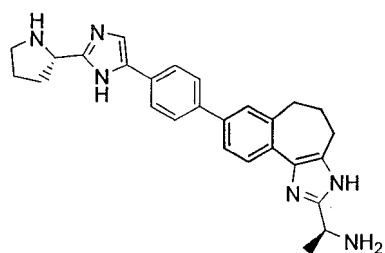
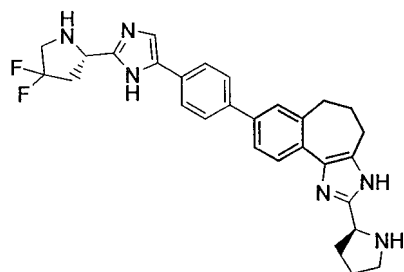
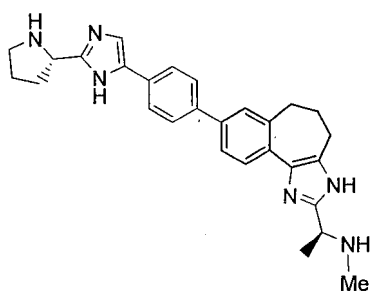
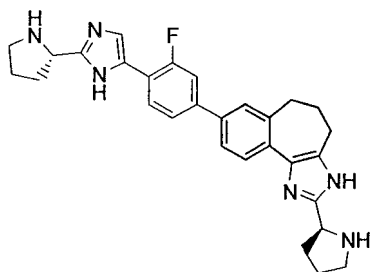
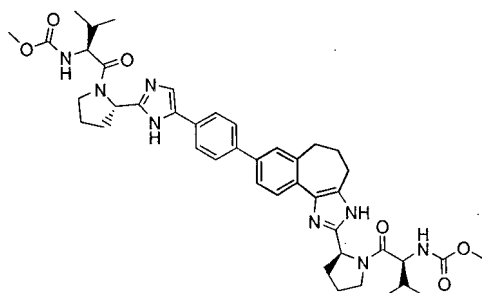
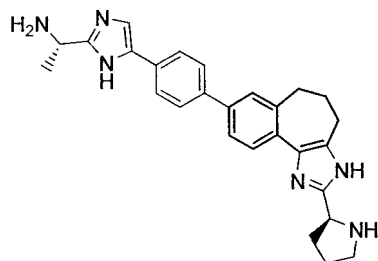
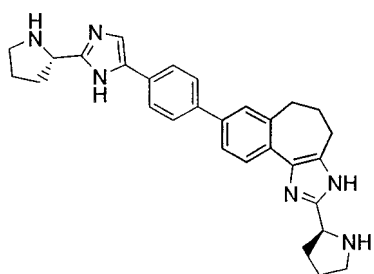
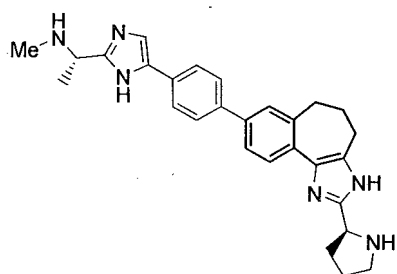
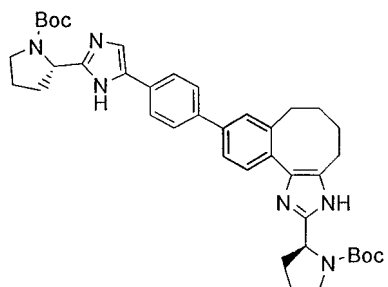
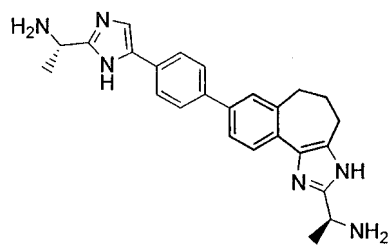
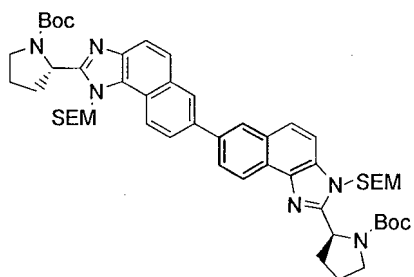
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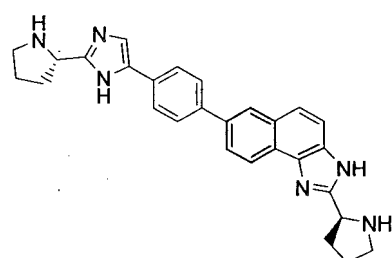
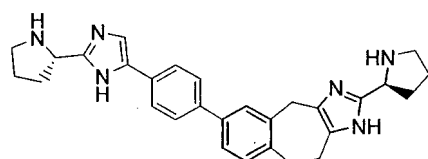
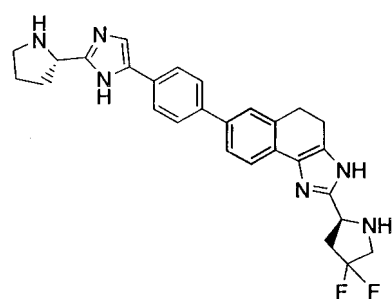
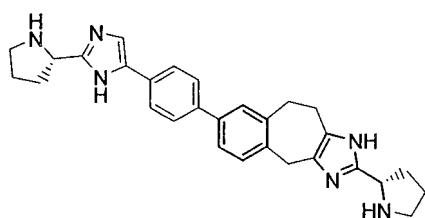
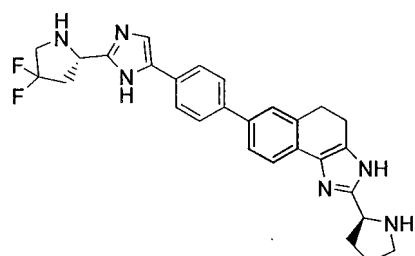
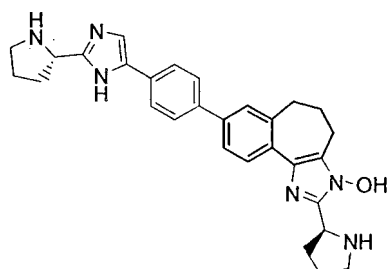
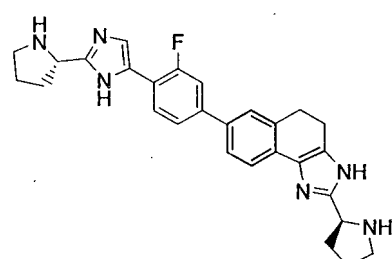
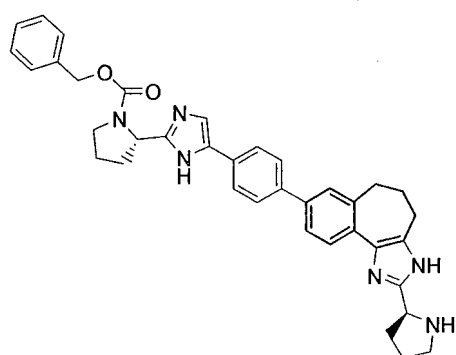
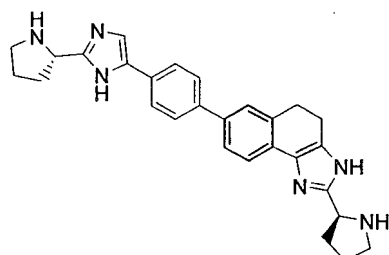
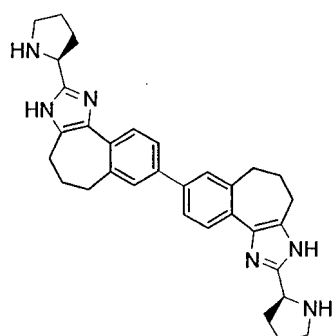
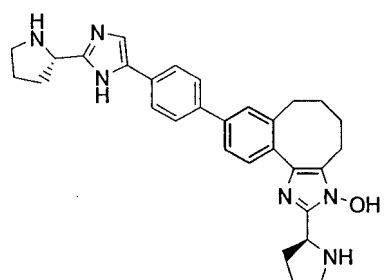
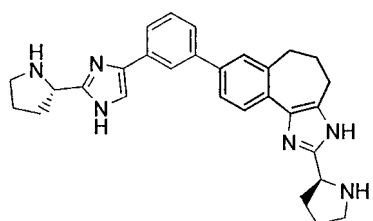
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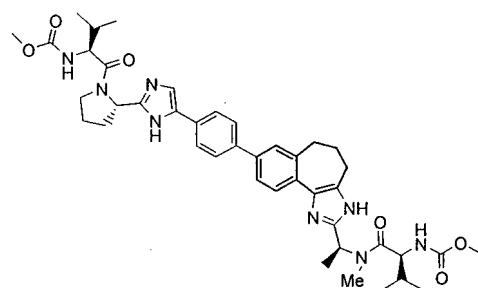
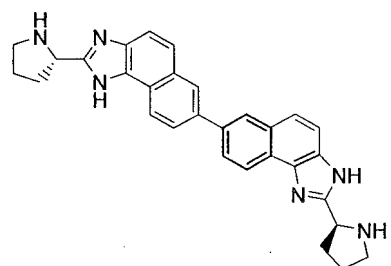
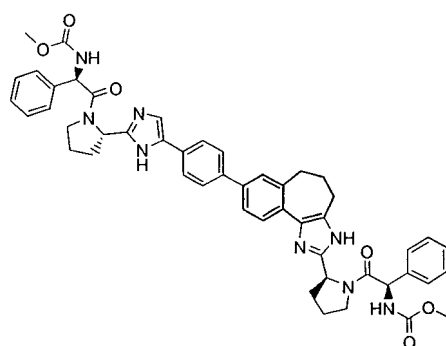
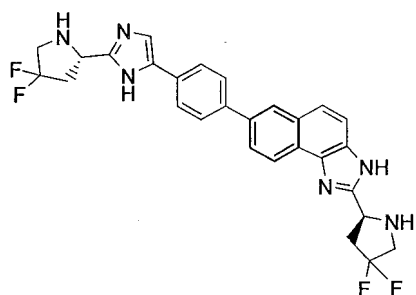
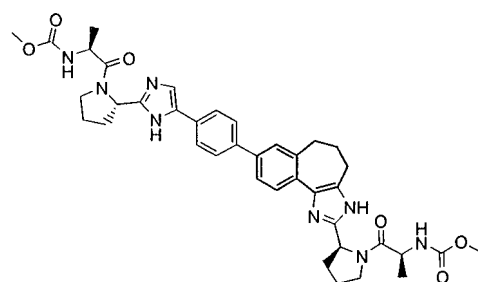
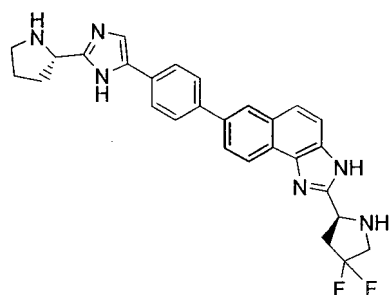
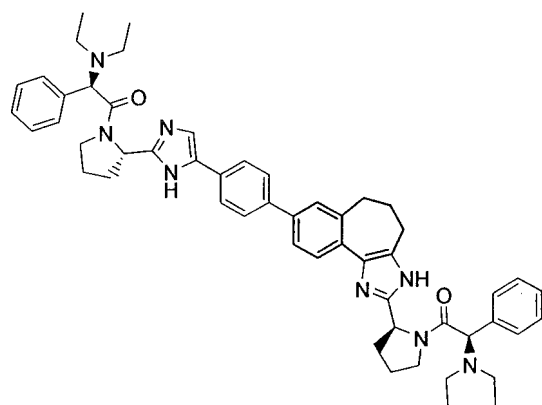
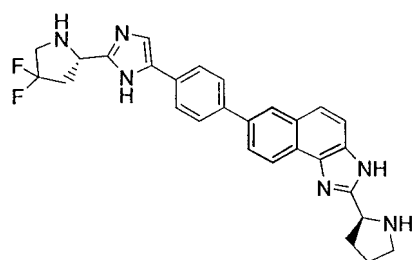
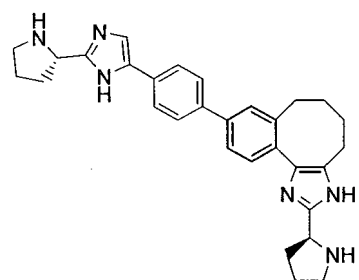
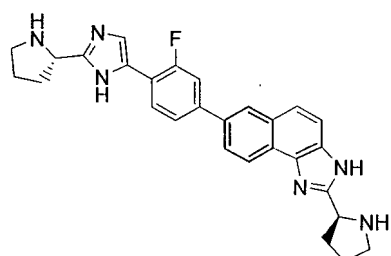


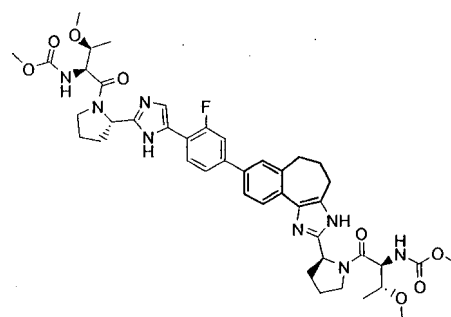
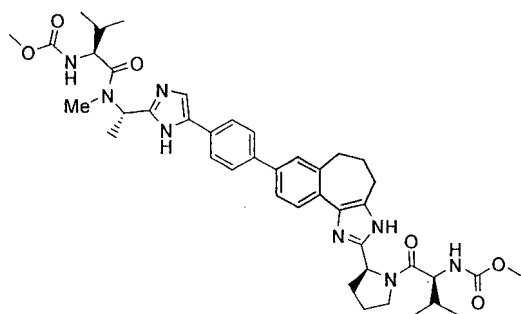
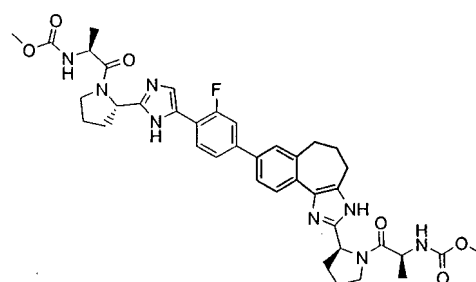
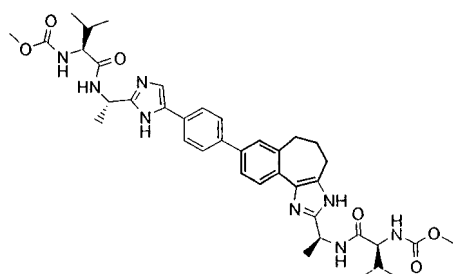
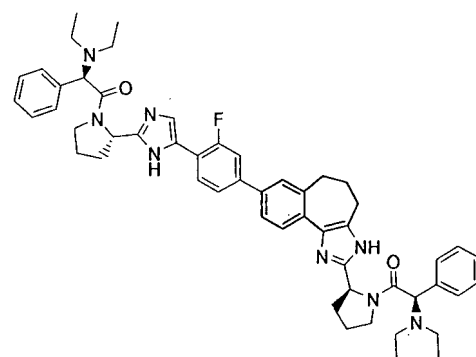
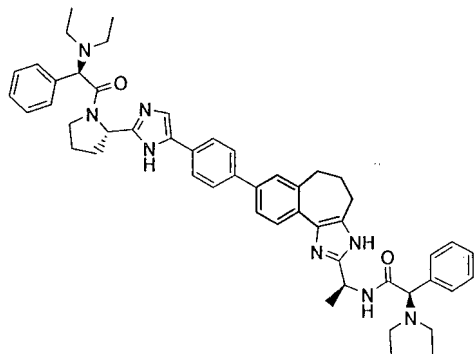
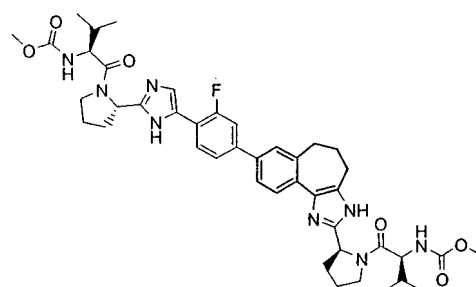
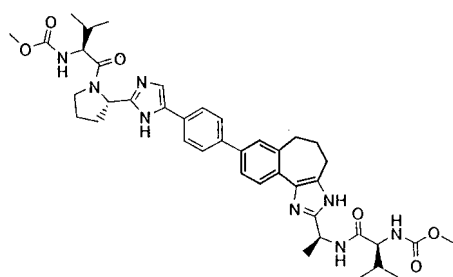
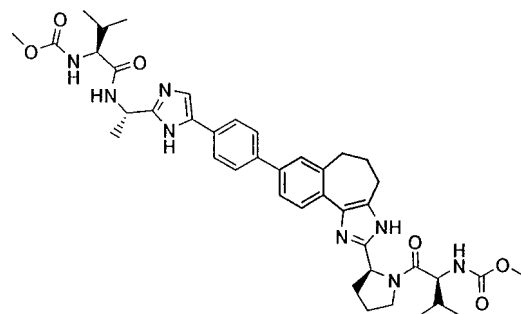
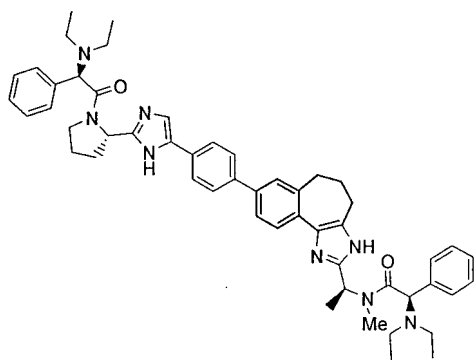


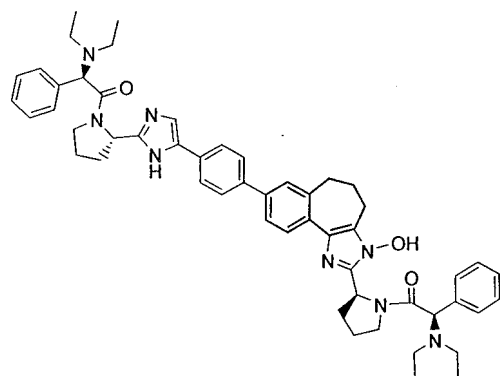
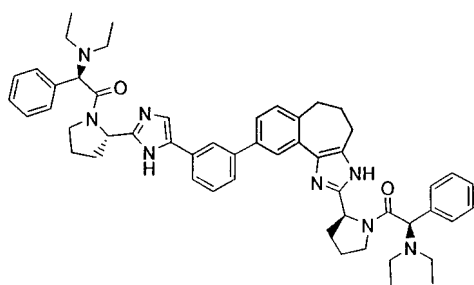
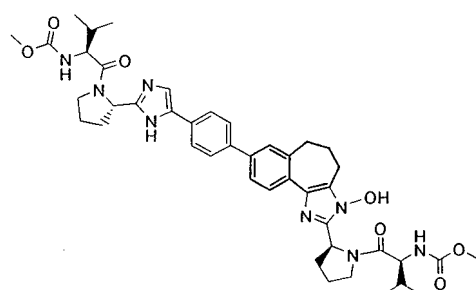
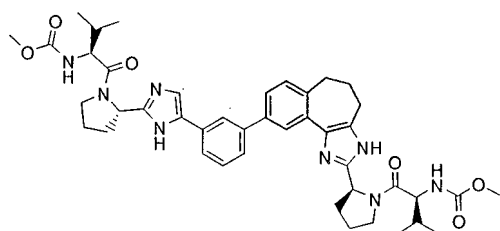
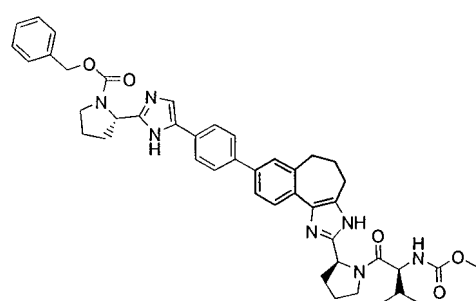
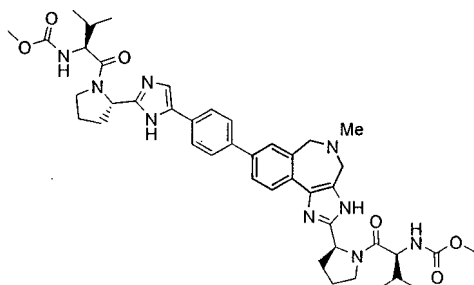
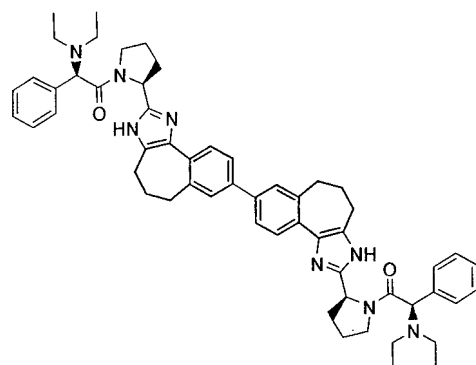
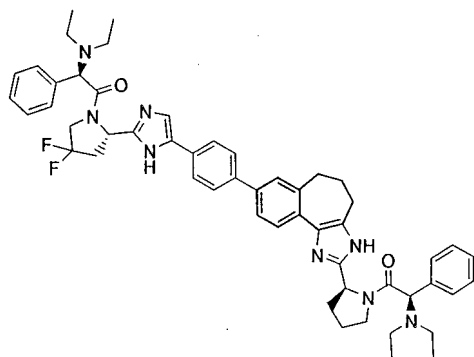
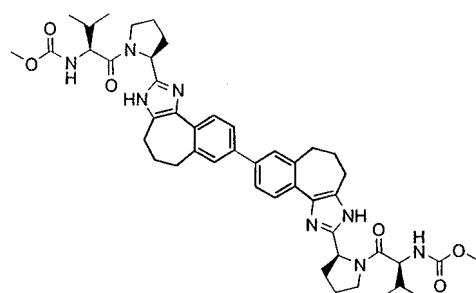
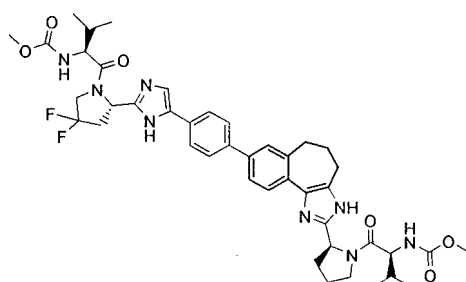


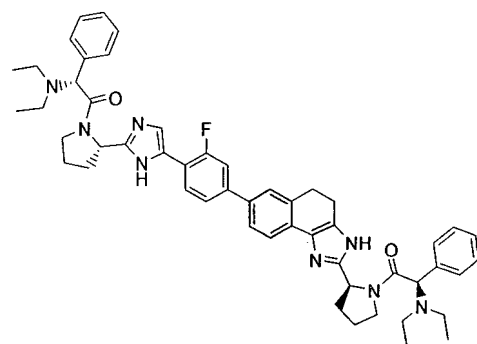
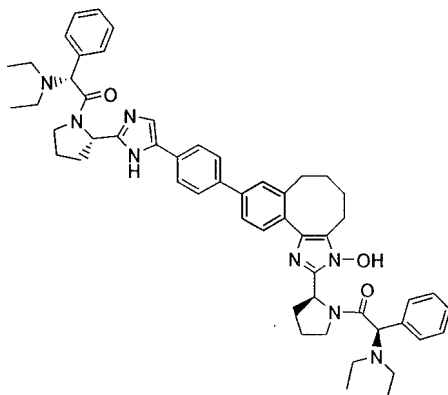
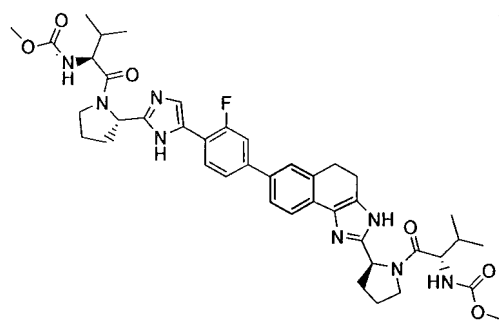
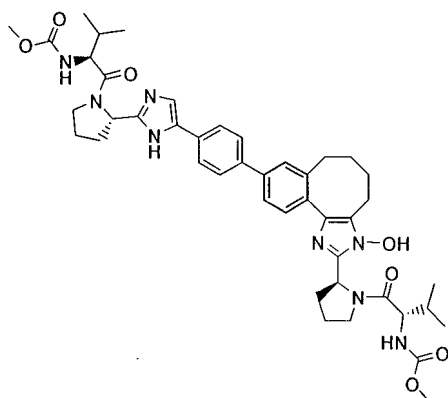
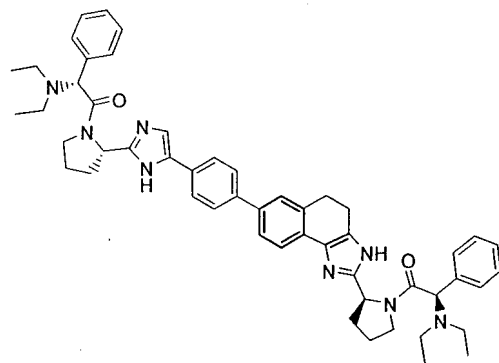
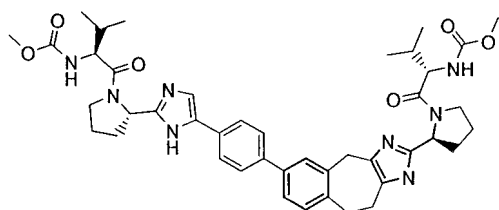
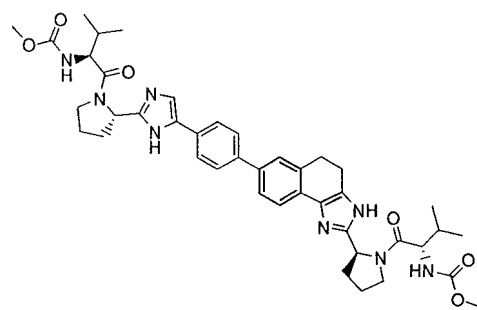
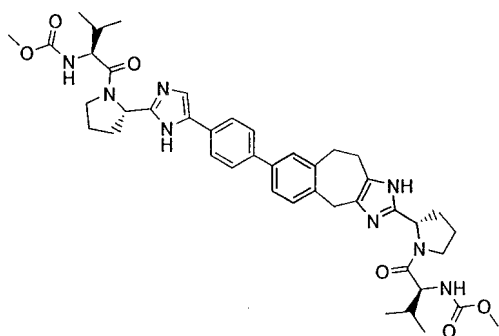


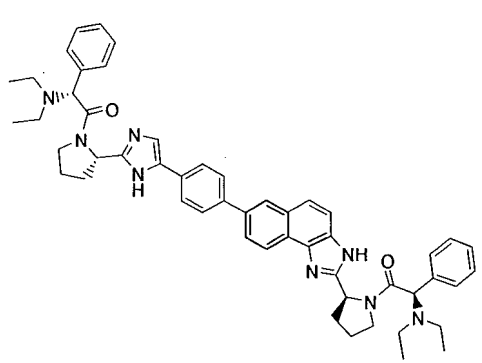
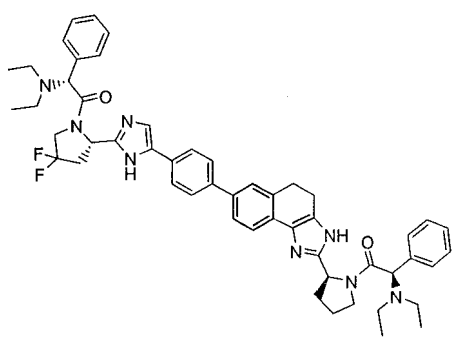
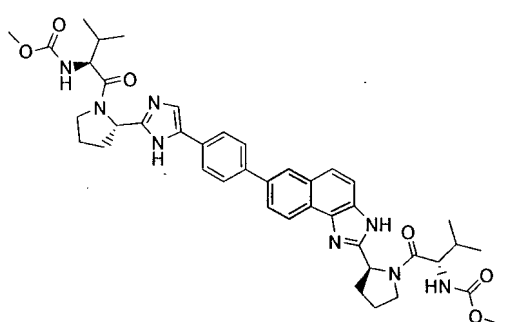
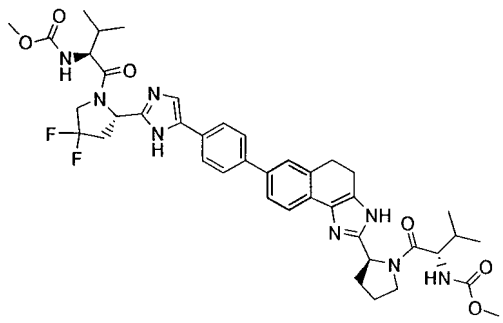
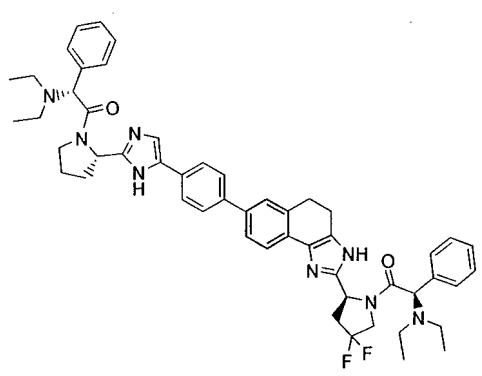
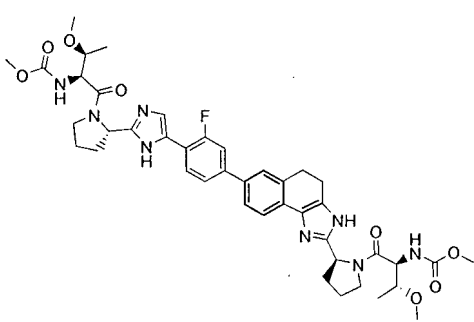
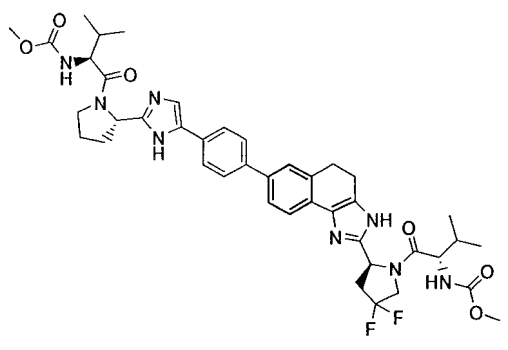
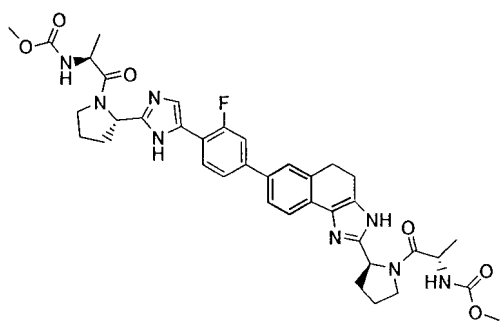


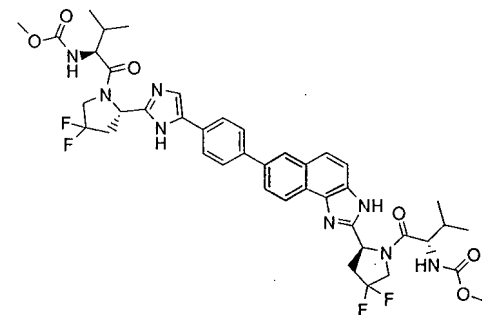
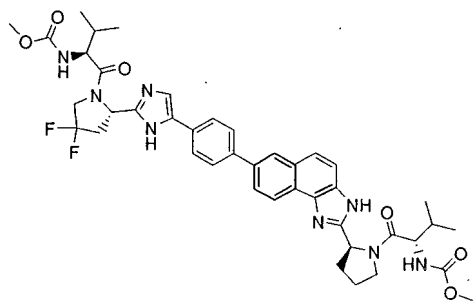
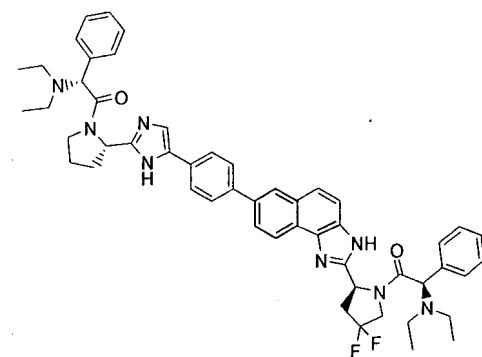
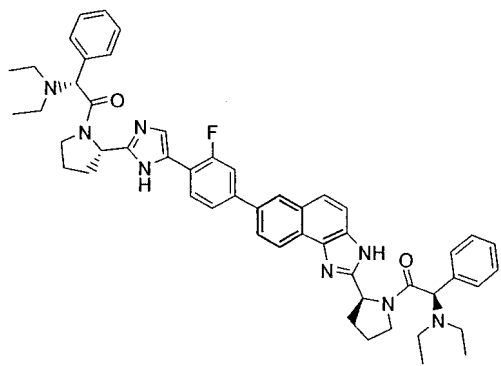
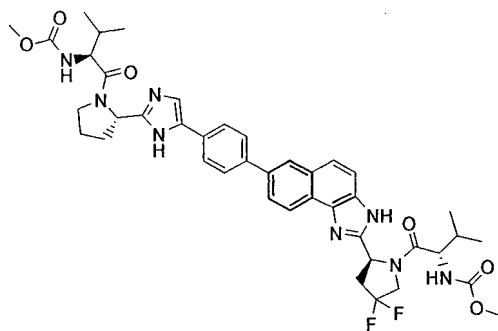
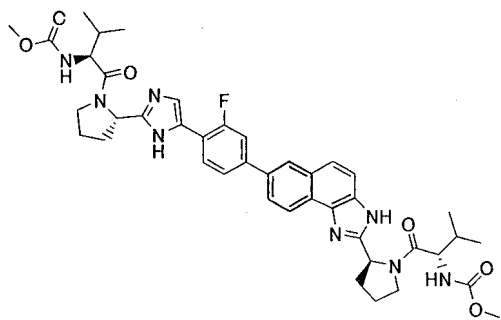
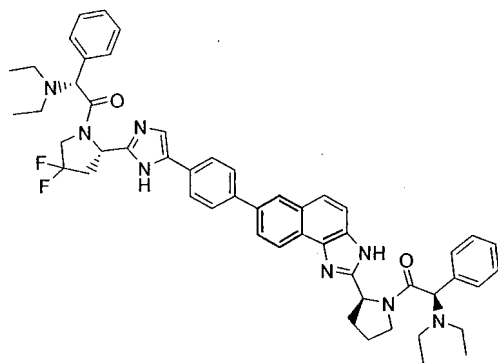
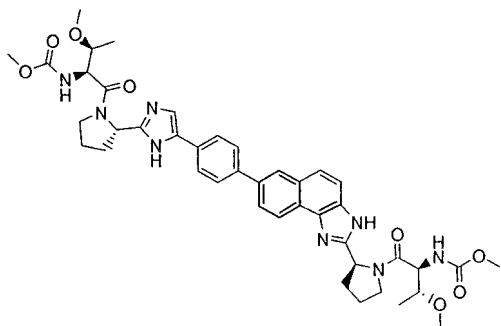


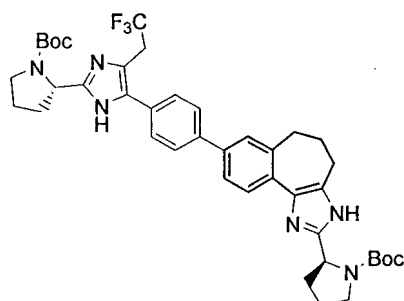
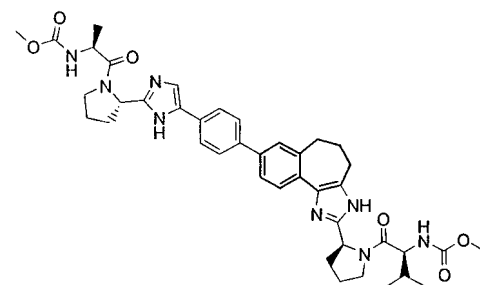
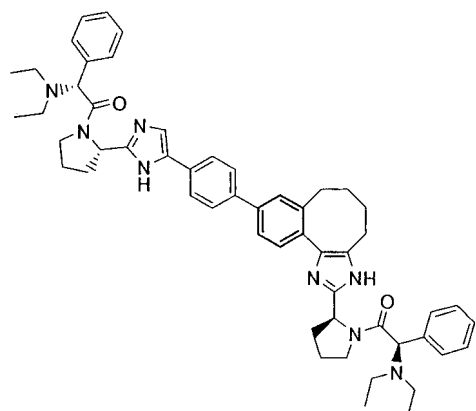
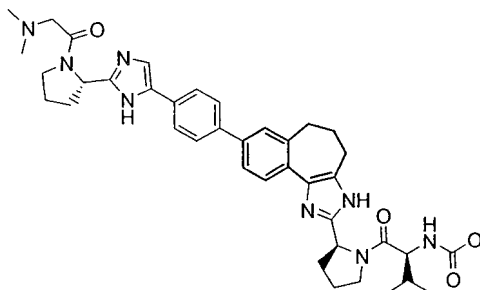
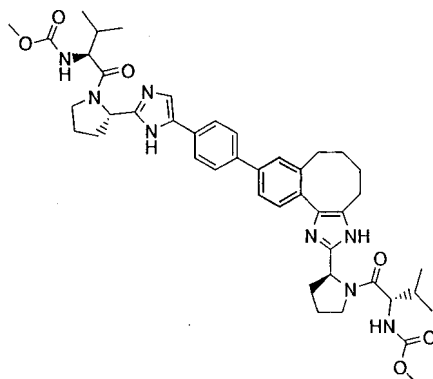
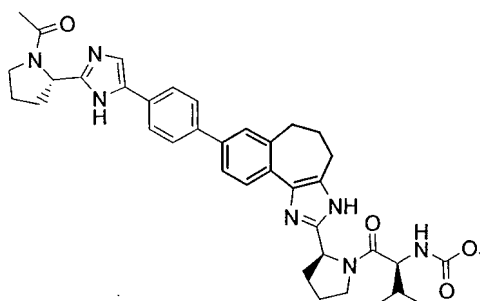
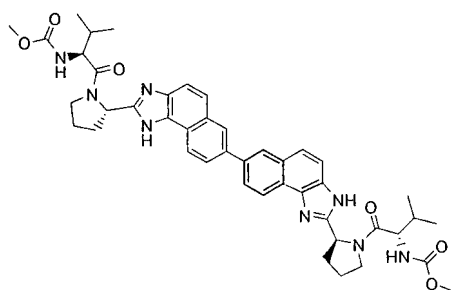
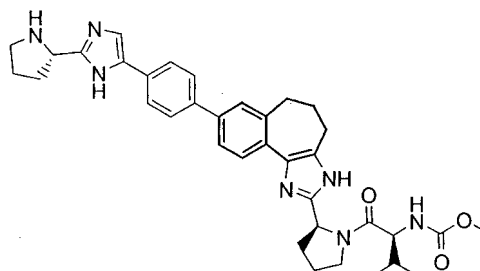
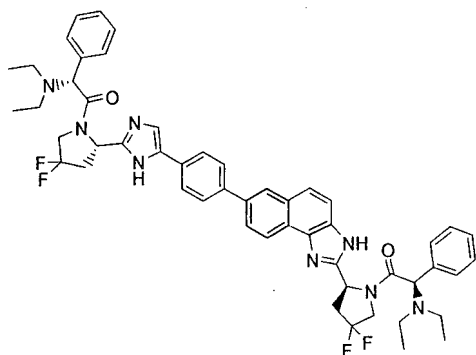


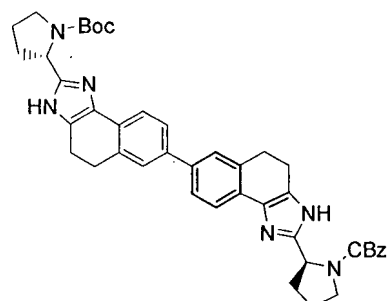
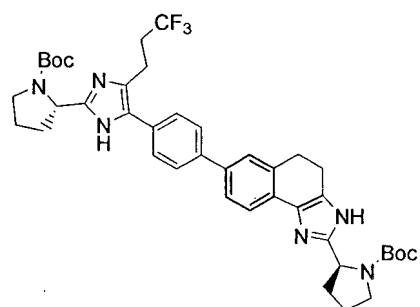
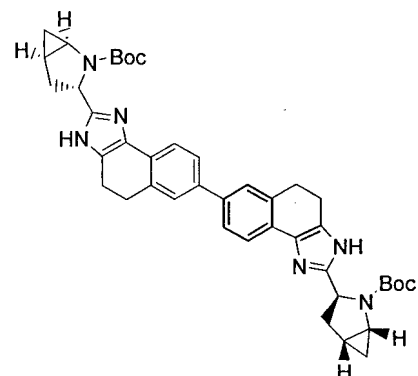
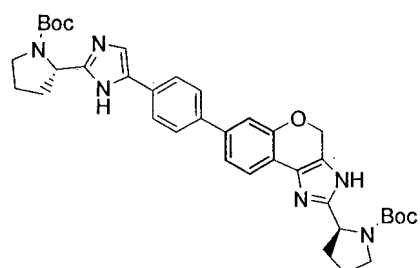
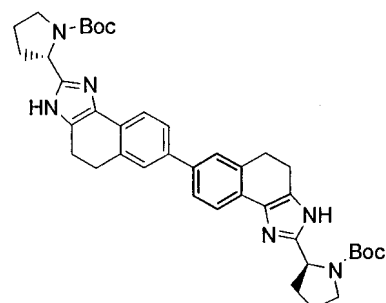
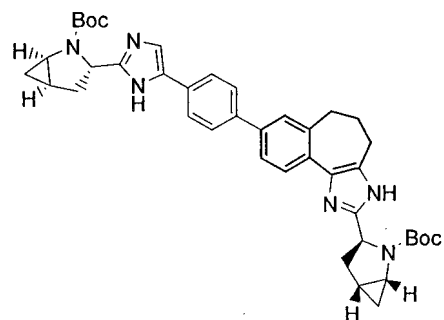
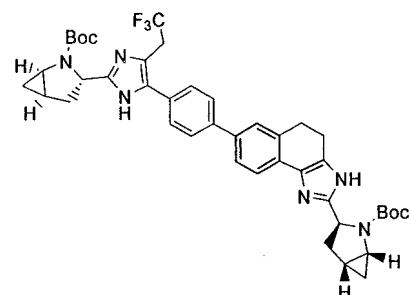
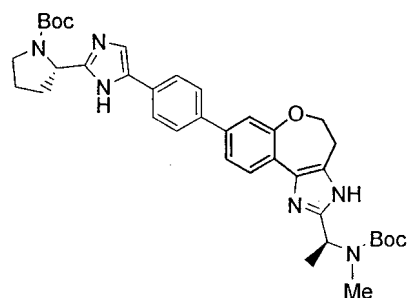
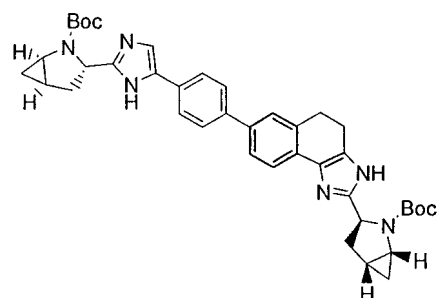
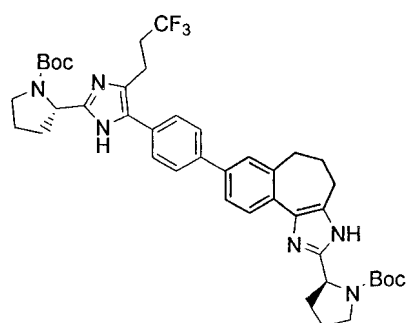


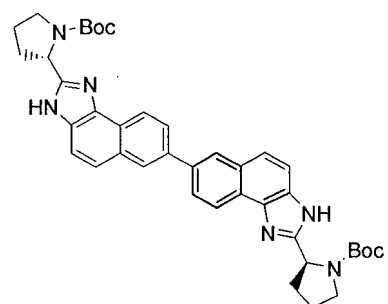
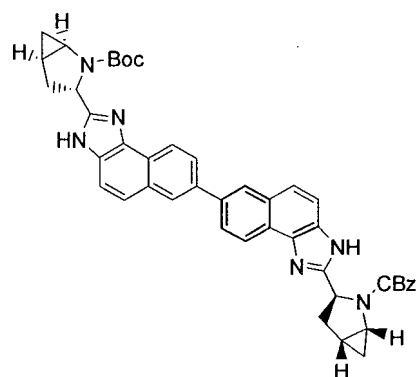
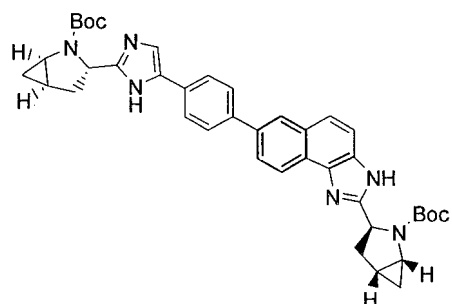
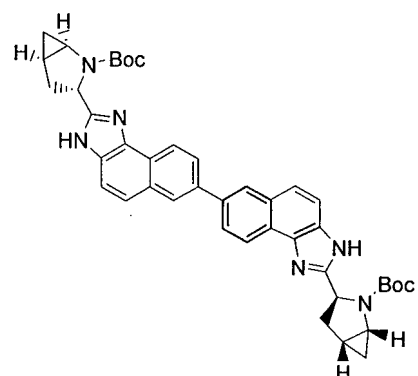
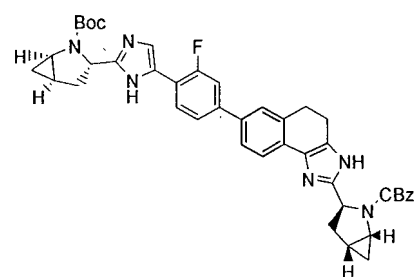
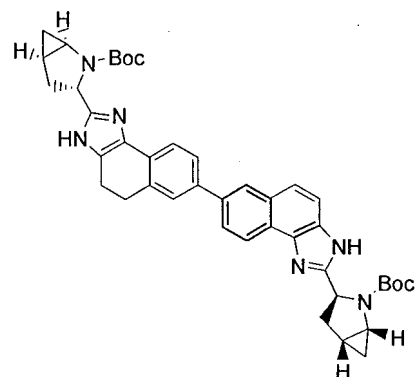
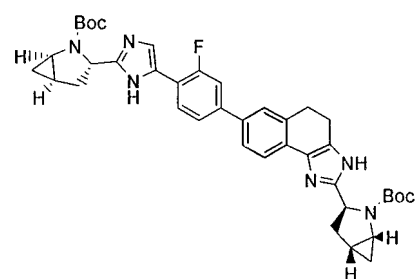
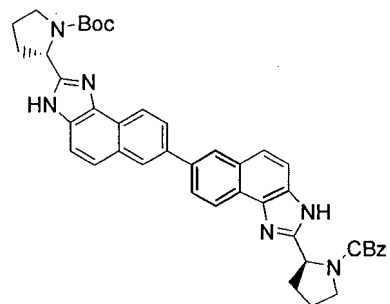
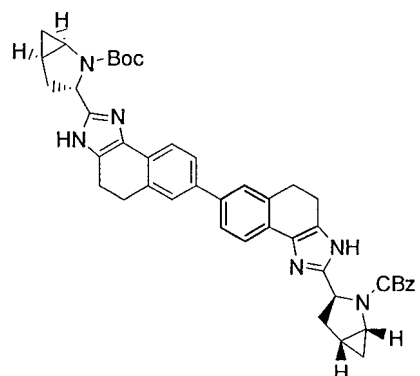


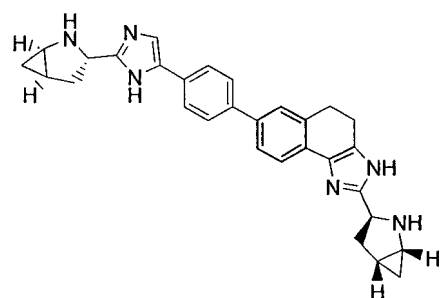
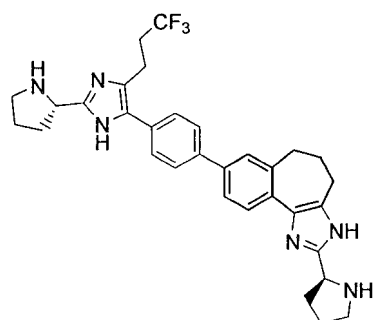
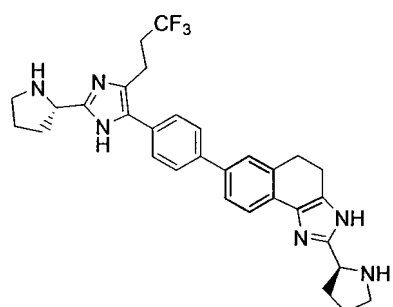
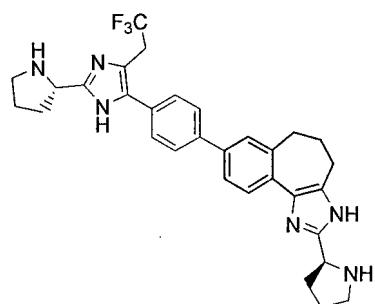
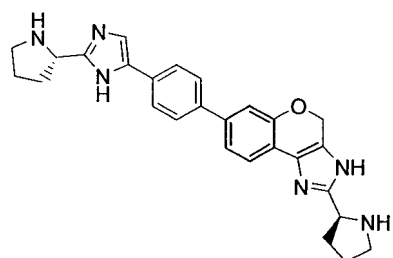
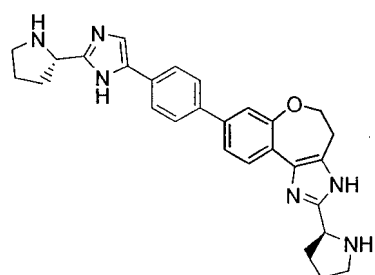
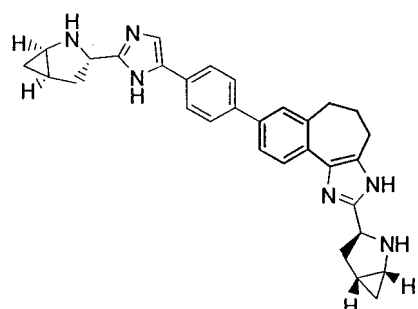
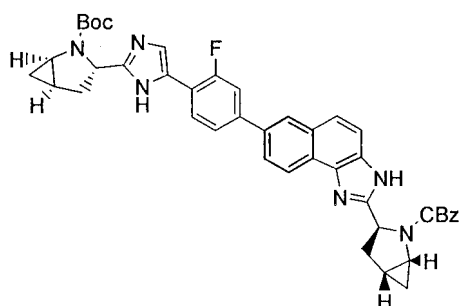
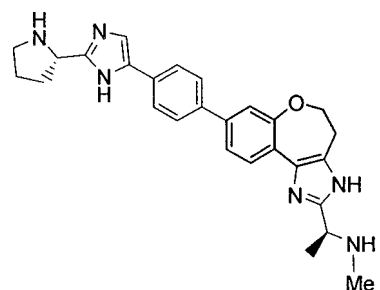
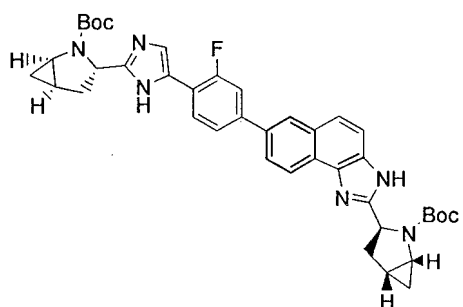


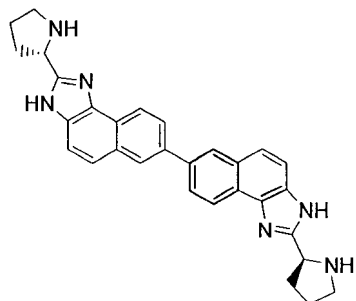
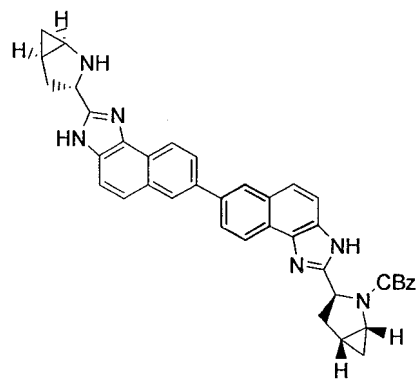
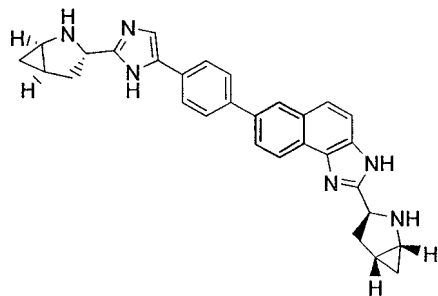
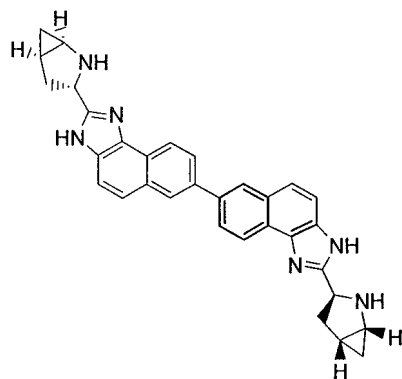
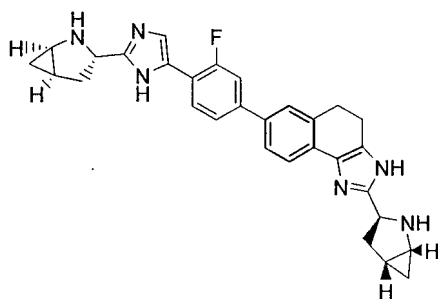
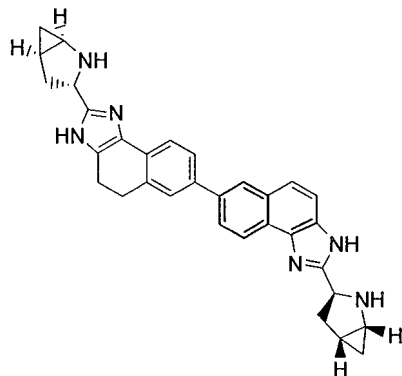
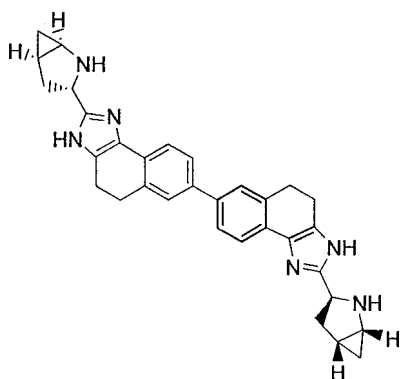
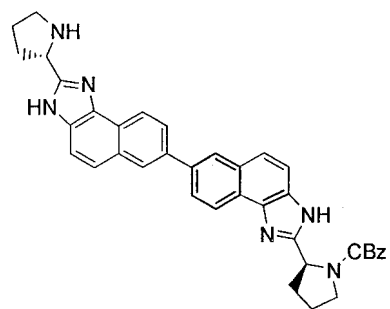
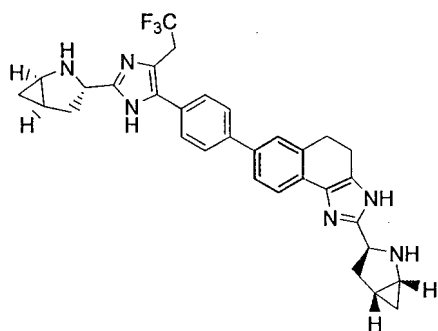


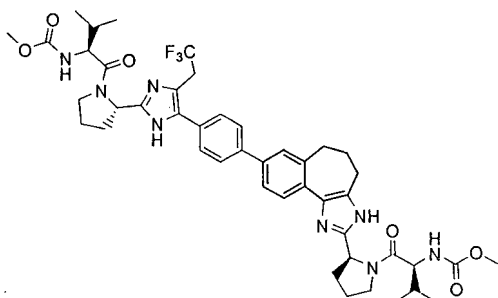
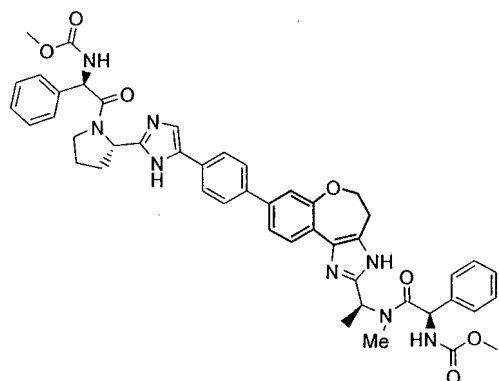
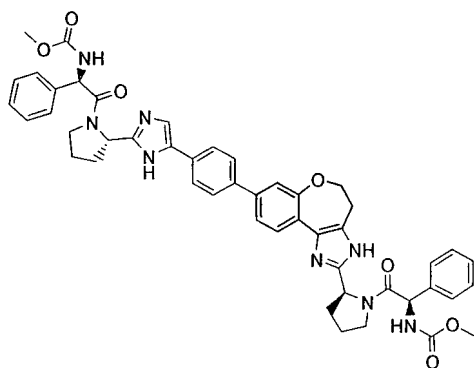
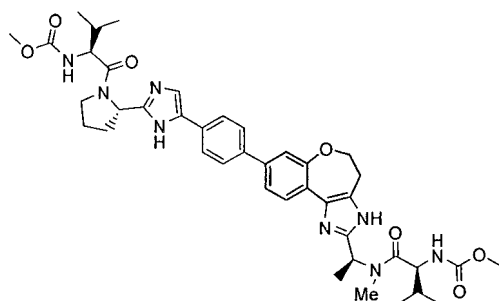
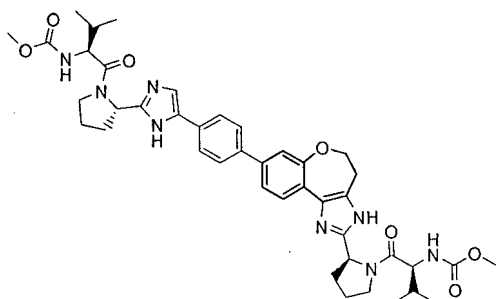
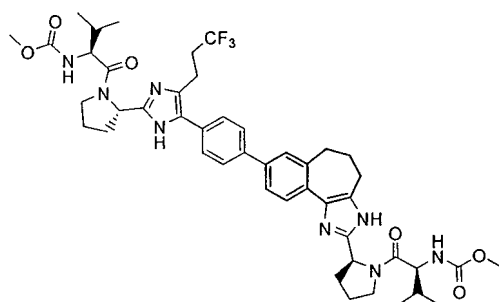
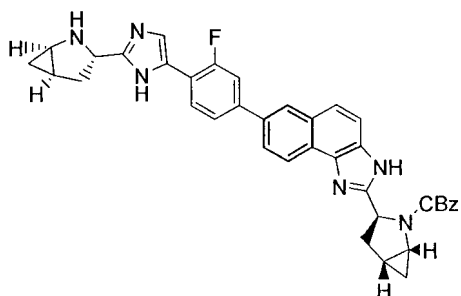
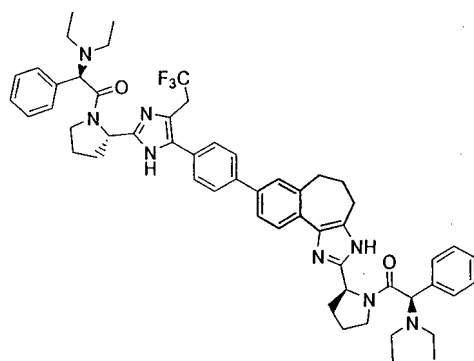
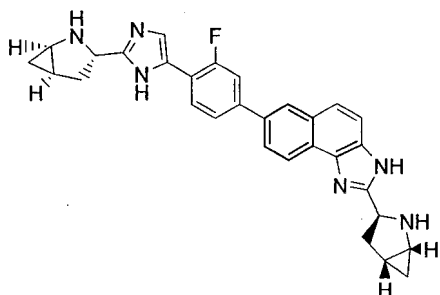


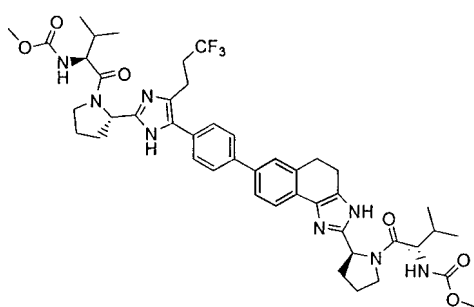
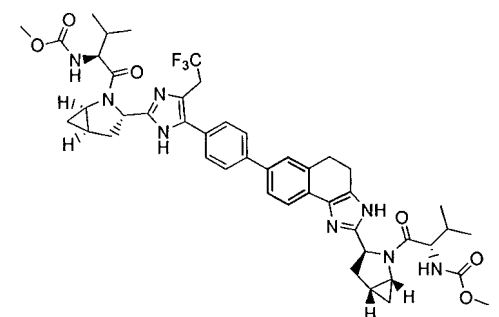
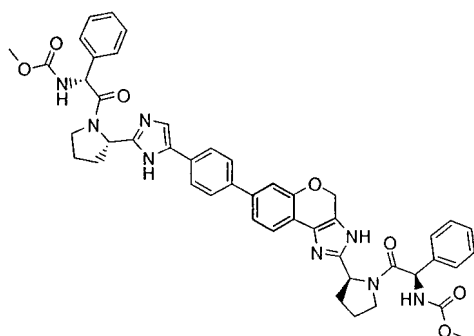
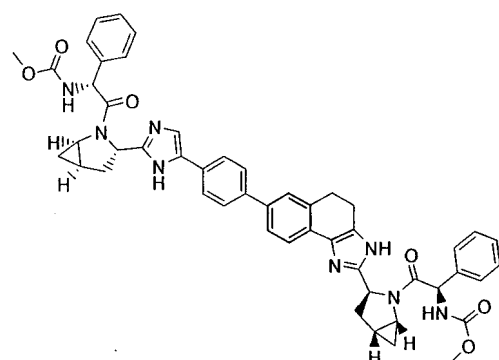
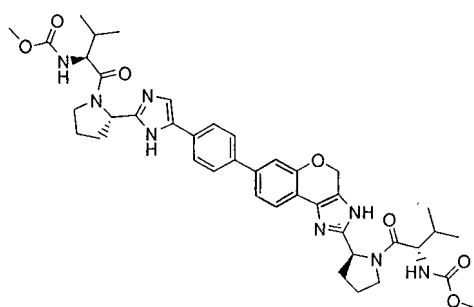
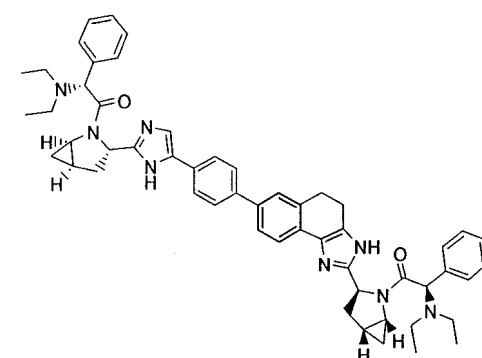
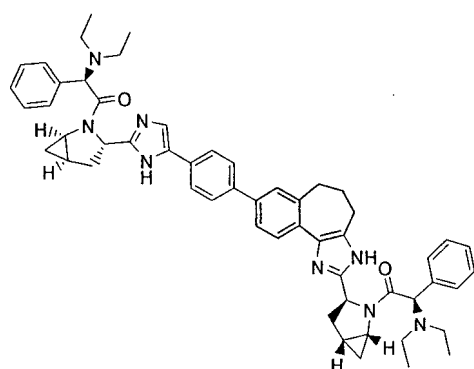
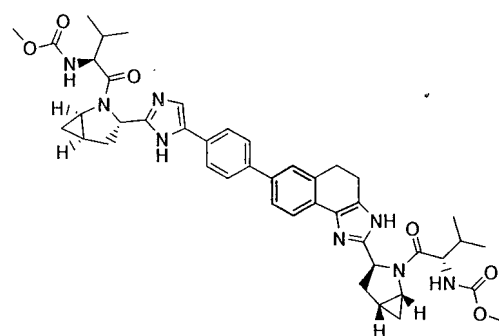
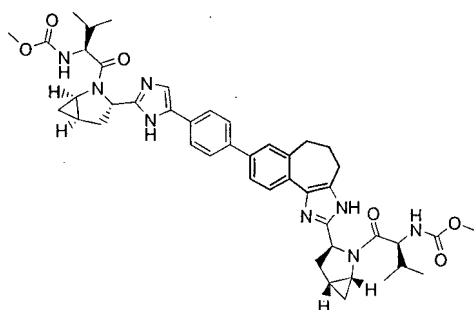


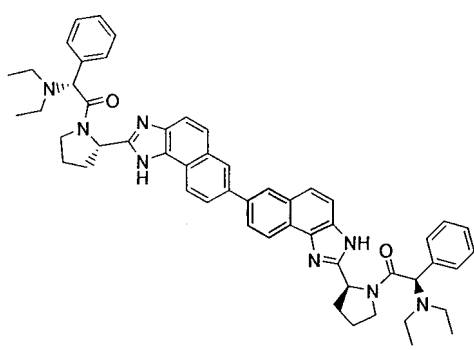
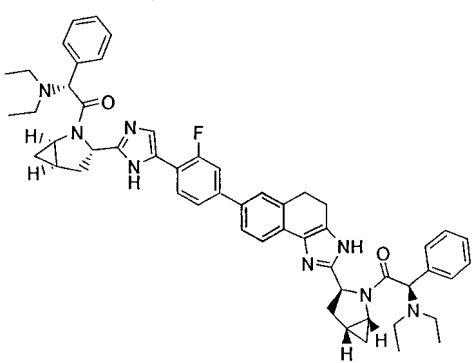
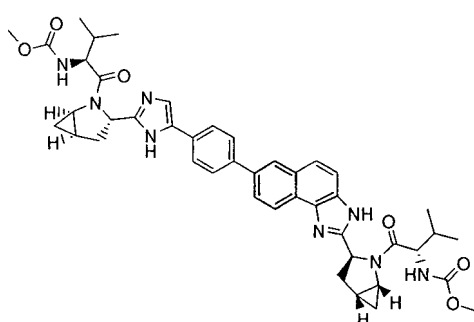
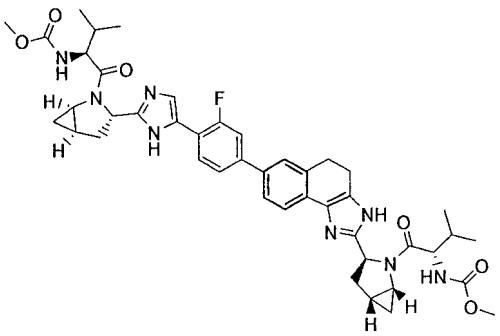
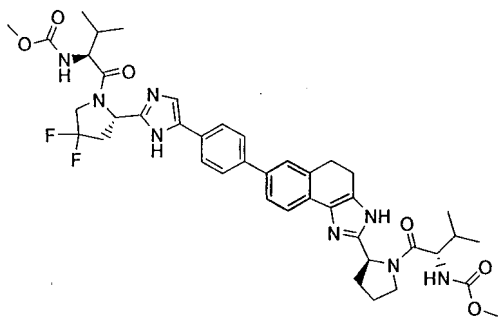
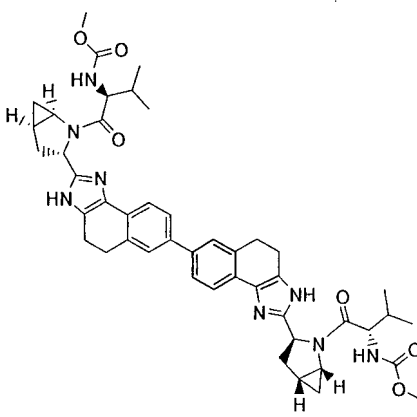
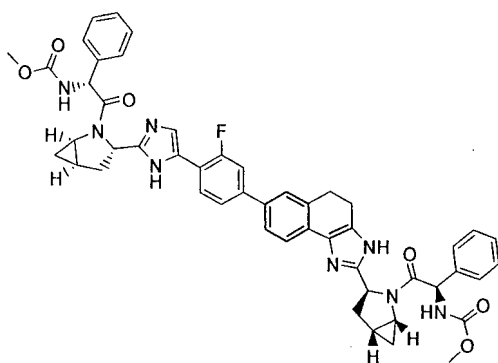
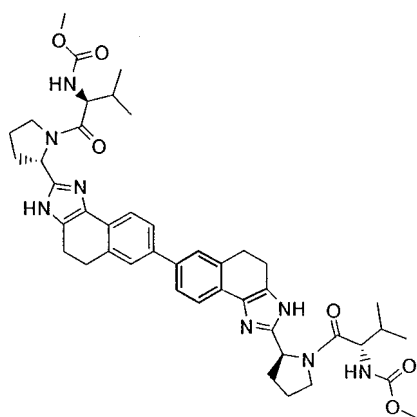


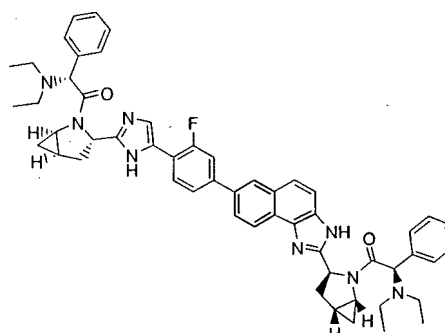
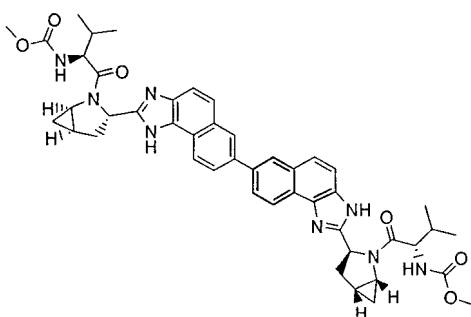
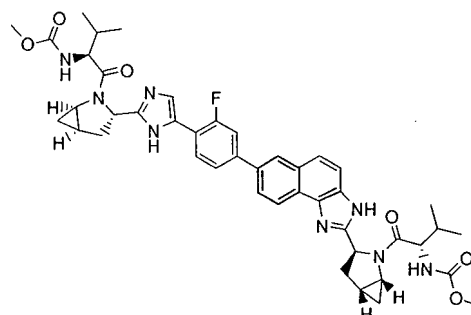
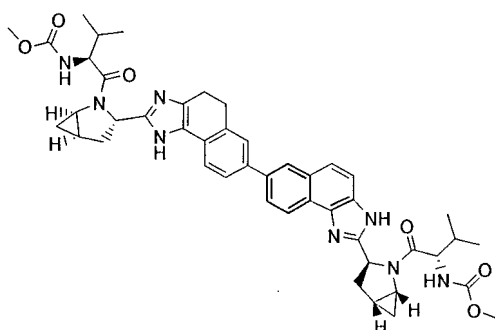
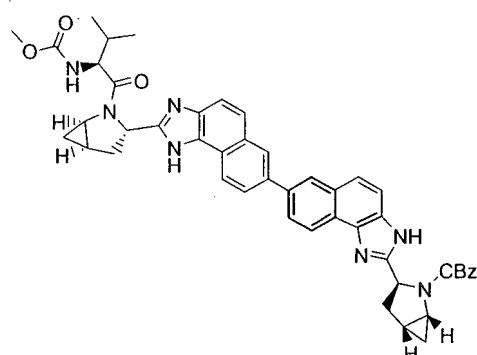
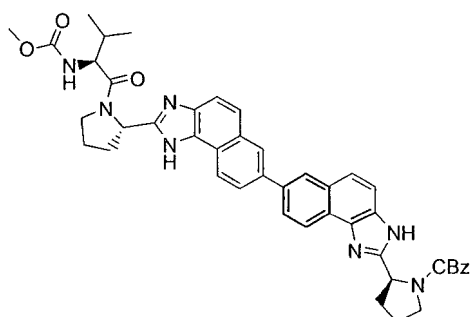
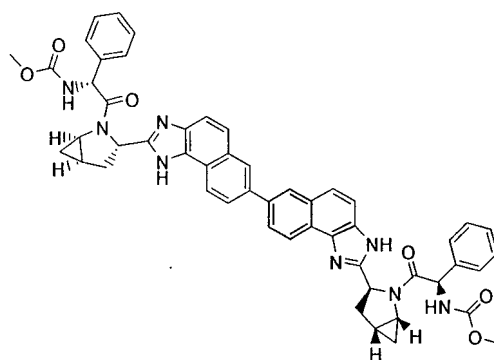
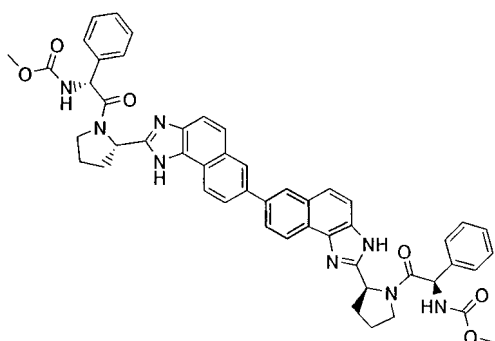


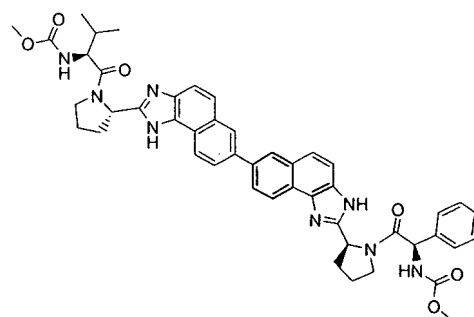
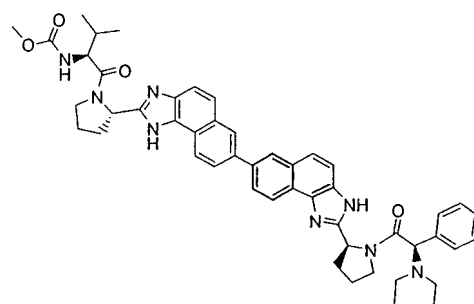
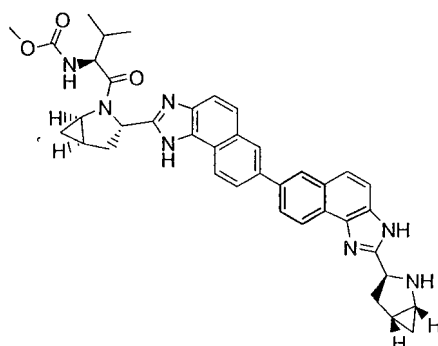
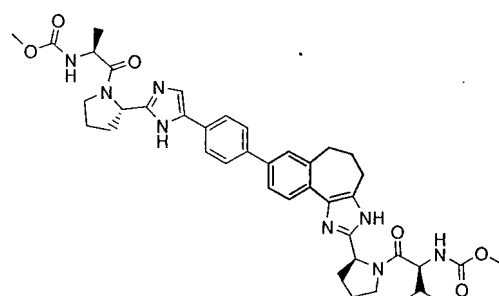
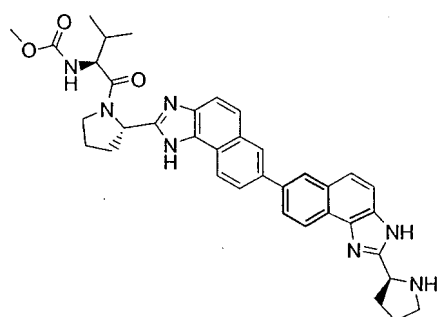
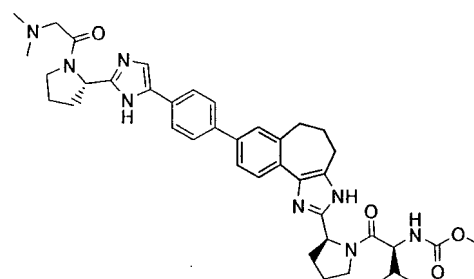
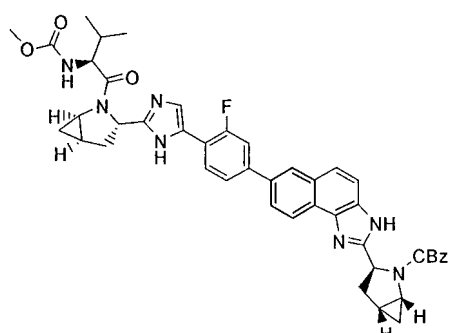
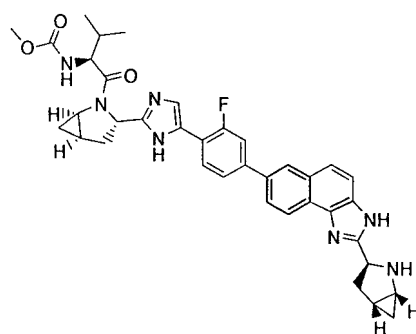
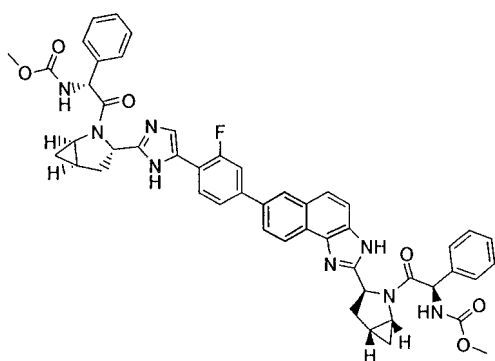


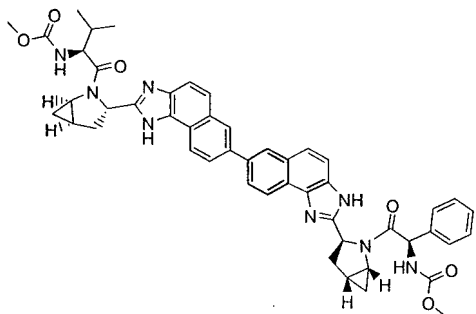
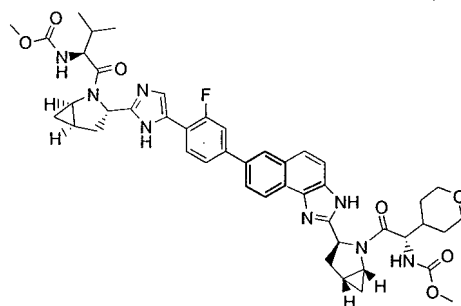
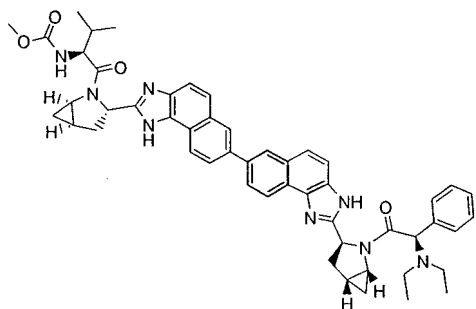
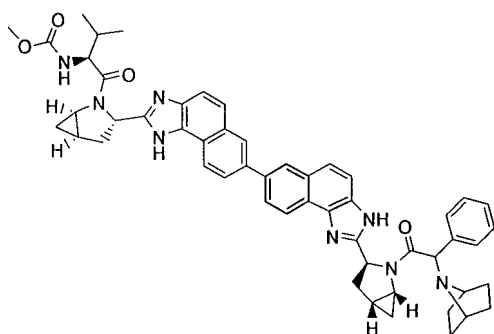
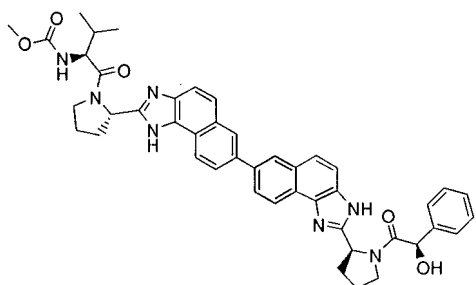
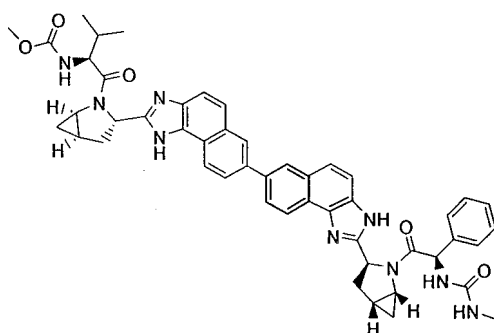
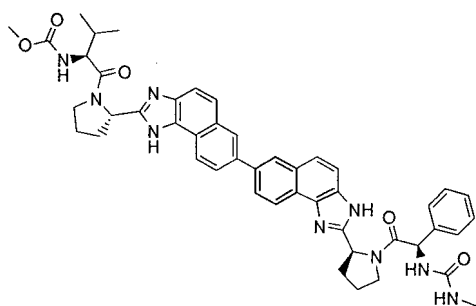
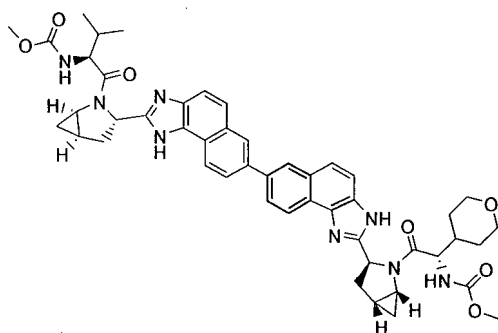
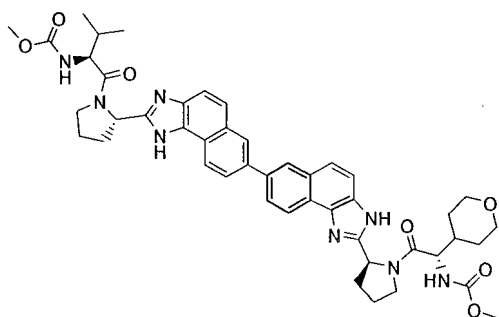












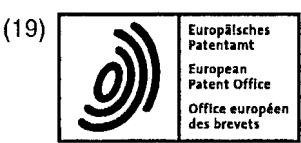
;

y

o una sal farmacéuticamente aceptable del mismo.

5. Una composición caracterizada porque comprende un compuesto de conformidad con la reivindicación 1, o una sal farmacéuticamente aceptable del mismo, y un portador farmacéuticamente aceptable.

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HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL
PT RO SE SI SK TR</p> <p>(30) Priority: 13.02.2008 US 28277</p> <p>(43) Date of publication of application:
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WO-A-2006/020082 WO-A-2006/133326
WO-A-2008/021936</p> |
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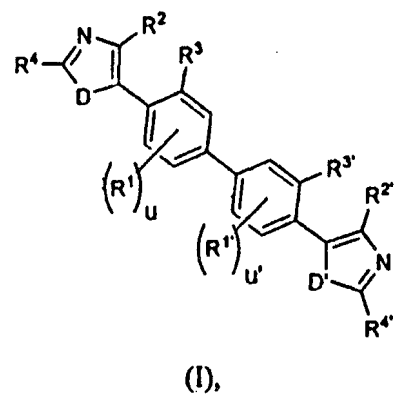
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examples, and that it can be embodied in other specific forms without departing from the essential attributes thereof. It is therefore desired that the examples be considered in all respects as illustrative and not restrictive, reference being made to the appended claims, rather than to the foregoing examples, and all changes which come within the meaning and range of equivalency of the claims are therefore intended to be embraced therein.

[0388] The compounds of the present disclosure may inhibit HCV by mechanisms in addition to or other than NS5A inhibition. In one embodiment the compounds of the present disclosure inhibit HCV replicon and in another embodiment the compounds of the present disclosure inhibit NSSA. Compounds of the present disclosure may inhibit multiple genotypes of HCV.

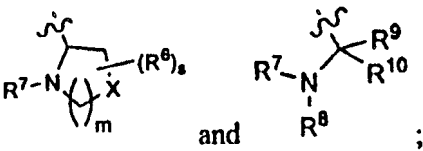
Claims

1. A compound of Formula (I)



or a pharmaceutically acceptable salt thereof, wherein
u and u' are independently 0, 1, 2, or 3;
D and D' are each independently selected from NR⁵, O, and S; wherein each R⁵ is independently selected from hydrogen, alkoxycarbonyl, alkyl, arylalkoxycarbonyl, carboxy, haloalkyl, hydroxy, (NR^aR^b)carbonyl, and trialkylsilylalkoxyalkyl;
each R¹ and R^{1'} is independently selected from alkoxy, alkoxyalkyl, alkoxycarbonyl, alkyl, arylalkoxycarbonyl, carboxy, formyl, halo, haloalkyl, hydroxy, hydroxyalkyl, -NR^aR^b, (NR^aR^b)alkyl, and (NR^aR^b)carbonyl;
R² is selected from hydrogen, alkoxycarbonyl, alkyl, arylalkoxycarbonyl, carboxy, haloalkyl, and (NR^aR^b)carbonyl; and
R³ is selected from hydrogen, alkoxy, alkoxyalkyl, alkoxycarbonyl, alkyl, arylalkoxycarbonyl, carboxy, formyl, halo, haloalkyl, hydroxy, hydroxyalkyl, -NR^aR^b, (NR^aR^b)alkyl, and (NR^aR^b)carbonyl; or
R² and R³, together with the carbon atoms to which they are attached, form a five- to eight-membered aromatic or non-aromatic ring optionally containing one or two heteroatoms independently selected from nitrogen, oxygen, and sulfur; wherein the five- to eight-membered ring is optionally substituted with one, two, or three substituents independently selected from alkoxy, alkoxyalkyl, alkoxycarbonyl, alkyl, alkylsulfonyl, aryl, arylalkyl, arylsulfonyl, carboxy, formyl, halo, haloalkoxy, haloalkyl, hydroxy, hydroxyalkyl, -NR^aR^b, (NR^aR^b)alkyl, (NR^aR^b)carbonyl, oxo, and spirocycle;
R^{2'} and R^{3'}, together with the carbon atoms to which they are attached, form a five- to eight-membered aromatic or non-aromatic ring optionally containing one or two heteroatoms independently selected from nitrogen, oxygen, and sulfur; wherein the five- to eight-membered ring is optionally substituted with one, two, or three substituents independently selected from alkoxy, alkoxyalkyl, alkoxycarbonyl, alkyl, alkylsulfonyl, aryl, arylalkyl, arylsulfonyl, carboxy, formyl, halo, haloalkoxy, haloalkyl, hydroxy, hydroxyalkyl, -NR^aR^b, (NR^aR^b)alkyl, (NR^aR^b)carbonyl, oxo, and spirocycle;
R⁴ and R^{4'} are each independently selected from

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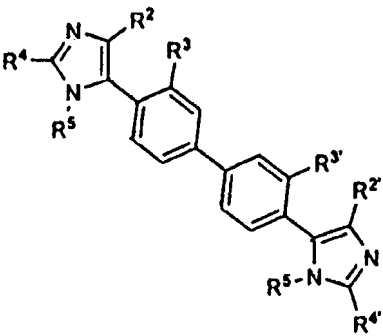
wherein each m is independently 0, 1, or 2;
each s is independently 0, 1, 2, 3, or 4;
each X is independently selected from O, S, S(O), SO₂, CH₂, CHR⁶, and C(R⁶)₂; provided that when m is 0, X is selected from CH₂, CHR⁶, and C(R⁶)₂;
each R⁶ is independently selected from alkoxy, alkyl, aryl, halo, haloalkyl, hydroxy, and -NR^aR^b, wherein the alkyl can optionally form a fused three- to six-membered ring with an adjacent carbon atom, wherein the three- to six-membered ring is optionally substituted with one or two alkyl groups;
each R⁷ is independently selected from hydrogen and R¹¹-C(O)-, and R¹¹-C(S)-;
R⁸ is selected from hydrogen and alkyl;
R⁹ and R¹⁰ are each independently selected from hydrogen, alkenyl, alkoxyalkyl, alkyl, haloalkyl, and (NR^aR^b)alkyl; or,
R⁹ and R¹⁰, together with the carbon atom to which they are attached, form a five or six membered saturated ring optionally containing one or two heteroatoms selected from NR^z, O, and S; wherein R^z is selected from hydrogen and alkyl; and
each R¹¹ is independently selected from alkoxy, alkoxyalkyl, alkoxycarbonyl, alkoxycarbonylalkyl, alkyl, alkylcarbonylalkyl, aryl, arylalkenyl, arylalkoxy, arylalkyl, aryloxyalkyl, cycloalkyl, (cycloalkyl)alkenyl, (cycloalkyl)alkyl, cycloalkyloxyalkyl, haloalkyl, heterocyclyl, heterocyclylalkenyl, heterocyclylalkoxy, heterocyclylalkyl, heterocyclylalkoxyalkyl, hydroxyalkyl, -NR^cR^d, (NR^cR^d)alkenyl, (NR^cR^d)alkyl, and (NR^cR^d)carbonyl;
R^a and R^b are independently selected from hydrogen, alkenyl, and alkyl;
R^c and R^d are independently selected from hydrogen, alkenyloxyalkyl, alkoxyalkylcarbonyl, alkoxycarbonyl, alkyl, alkylcarbonyl, alkylsulfonyl, aryl, arylalkoxyalkyl, arylalkyl, arylalkylcarbonyl, arylcarbonyl, aryloxyalkyl, arylsulfonyl, cycloalkyl, cycloalkylsulfonyl, formyl, haloalkoxyalkyl, heterocyclyl, heterocyclylalkoxyalkyl, heterocyclylalkyl, heterocyclylalkylcarbonyl, heterocyclylalkylcarbonyl, heterocyclylalkylcarbonyl, heterocyclylalkylcarbonyl, hydroxyalkylcarbonyl, (NR^eR^f)alkyl, (NR^eR^f)alkylcarbonyl, (NR^eR^f)carbonyl, (NR^eR^f)sulfonyl, -C(NCN)OR', and -C(NCN)NR^xR^y, wherein R' is selected from alkyl and unsubstituted phenyl, and wherein the alkyl part of the arylalkyl, the arylalkylcarbonyl, the heterocyclylalkyl, and the heterocyclylalkylcarbonyl are further optionally substituted with one -NR^eR^f group; and wherein the aryl, the aryl part of the arylalkoxyalkyl, the arylalkyl, the arylalkylcarbonyl, the arylcarbonyl, the aryloxyalkyl, and the arylsulfonyl, the heterocyclyl, and the heterocyclyl part of the heterocyclylalkoxyalkyl, the heterocyclylalkyl, the heterocyclylalkylcarbonyl, the heterocyclylcarbonyl, and the heterocyclylalkoxyalkyl are further optionally substituted with one, two, or three substituents independently selected from alkoxy, alkyl, cyano, halo, haloalkoxy, haloalkyl, and nitro;
R^e and R^f are independently selected from hydrogen, alkyl, unsubstituted aryl, unsubstituted arylalkyl, unsubstituted cycloalkyl, unsubstituted (cycloalkyl)alkyl, unsubstituted heterocyclyl, unsubstituted heterocyclylalkyl, (NR^xR^y)alkyl, and (NR^xR^y)carbonyl; and
R^x and R^y are independently selected from hydrogen, alkoxycarbonyl, alkyl, alkylcarbonyl, unsubstituted aryl, unsubstituted arylalkoxyalkyl, unsubstituted arylalkyl, unsubstituted cycloalkyl, unsubstituted heterocyclyl, and (NR^xR^y)carbonyl, wherein R^x and R^y are independently selected from hydrogen and alkyl.

2. A compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein D and D' are each NR⁵.
3. A compound of claim 2, or a pharmaceutically acceptable salt thereof, wherein each R⁵ is independently selected from hydrogen and hydroxy.
4. A compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein u and u' are each 0.
5. A compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein R² is selected from hydrogen and haloalkyl.
6. A compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein R³ is selected from hydrogen and halo.
7. A compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein R² and R³, together with the carbon

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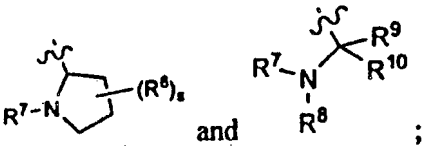
atoms to which they are attached, form a six- or seven-membered carbocyclic ring.

8. A compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein R^{2'} and R^{3'}, together with the carbon atoms to which they are attached, form a six- to eight-membered ring optionally containing one heteroatom selected from oxygen, nitrogen, and sulfur; wherein the ring is optionally substituted with one or two alkyl groups.
9. A compound of claim 1 having Formula (II)



(II),

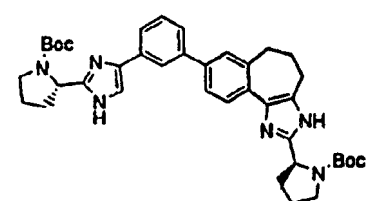
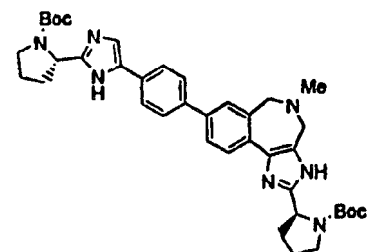
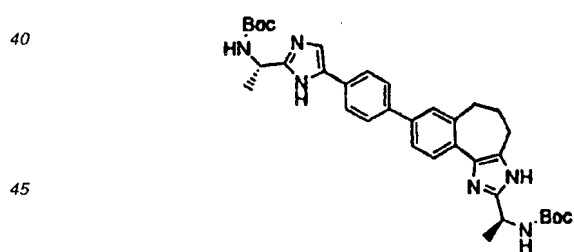
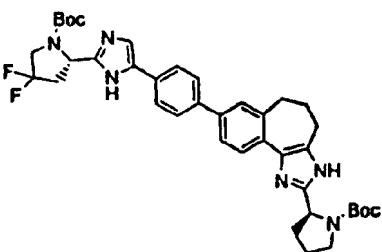
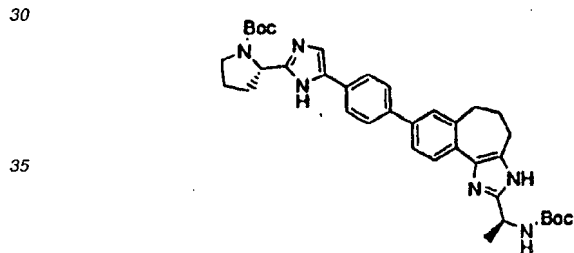
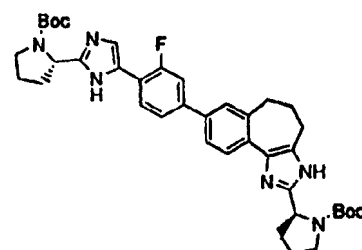
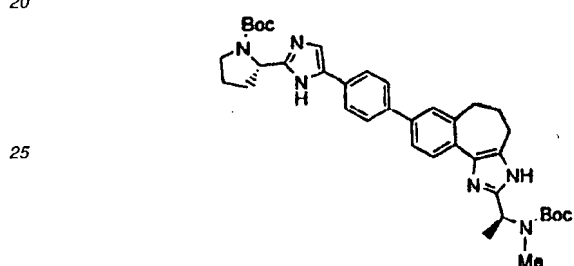
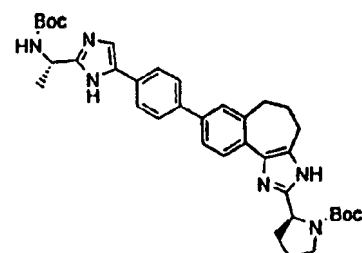
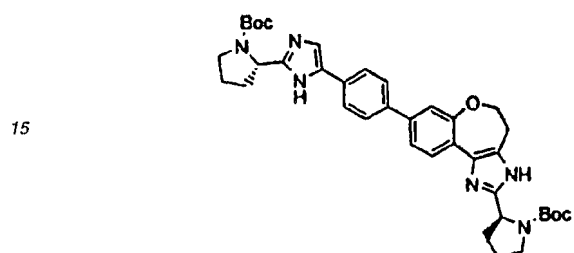
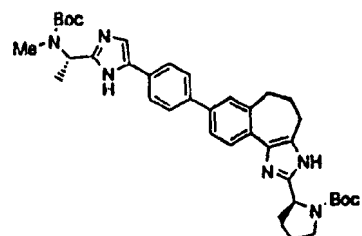
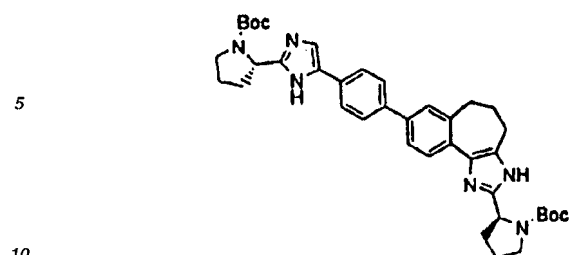
or a pharmaceutically acceptable salt thereof, wherein
R² is selected from hydrogen and haloalkyl; and
R³ is selected from hydrogen and halo; or
R² and R³, together with the carbon atoms to which they are attached, form a five- or six-membered aromatic or non-aromatic ring carbocyclic ring;
R^{2'} and R^{3'}, together with the carbon atoms to which they are attached, form a six- to eight-membered aromatic or non-aromatic ring optionally containing one heteroatom selected from oxygen, nitrogen, and sulfur; wherein the ring is optionally substituted with one or two alkyl groups;
R⁴ and R^{4'} are each independently selected from



wherein each s is 0 or 2;
each R⁶ is independently selected from alkyl and halo, wherein the alkyl forms a fused three-membered ring with an adjacent carbon atom;
each R⁷ is independently selected from hydrogen and R¹¹-C(O)-; R⁸ is selected from hydrogen and alkyl;
R⁹ and R¹⁰ are each independently selected from hydrogen and alkyl; and each R¹¹ is independently selected from alkyl, arylalkoxy, arylalkyl, and (NR^cR^d)alkyl.

10. A compound of claim 1 selected from:

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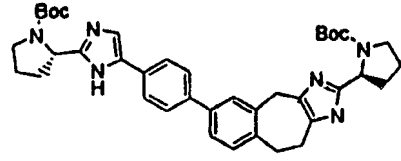
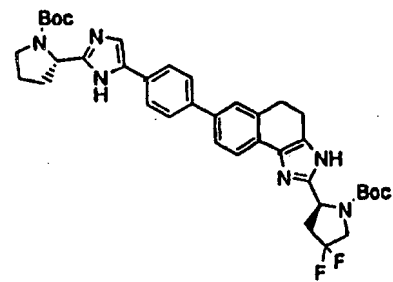
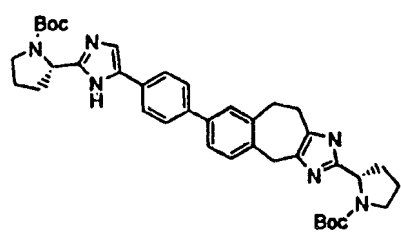
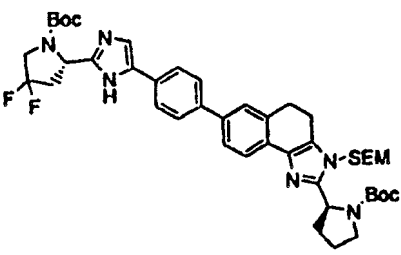
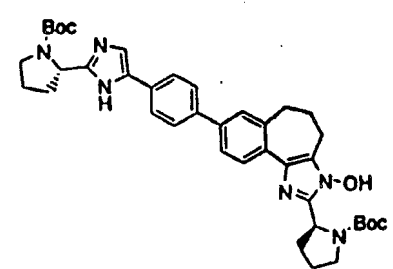
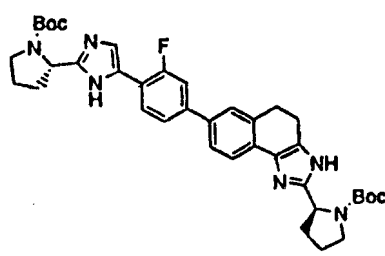
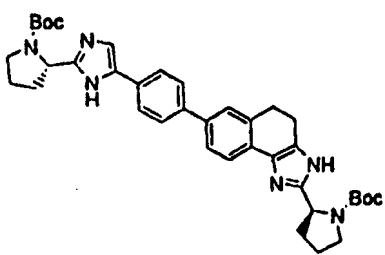
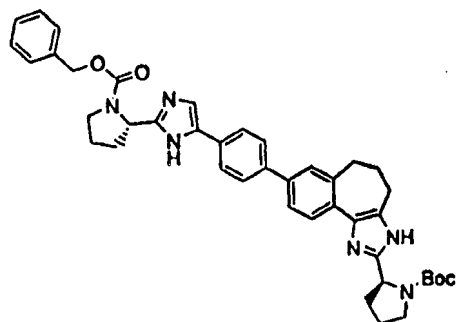
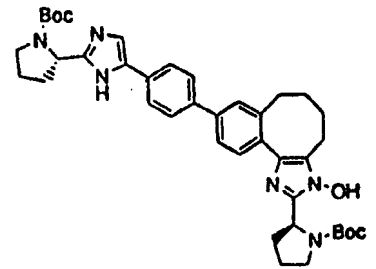
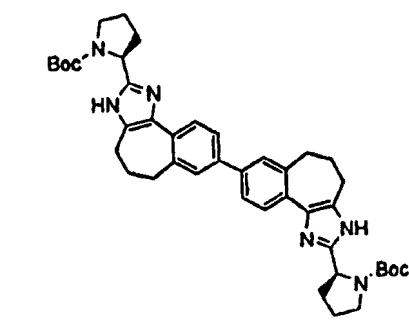
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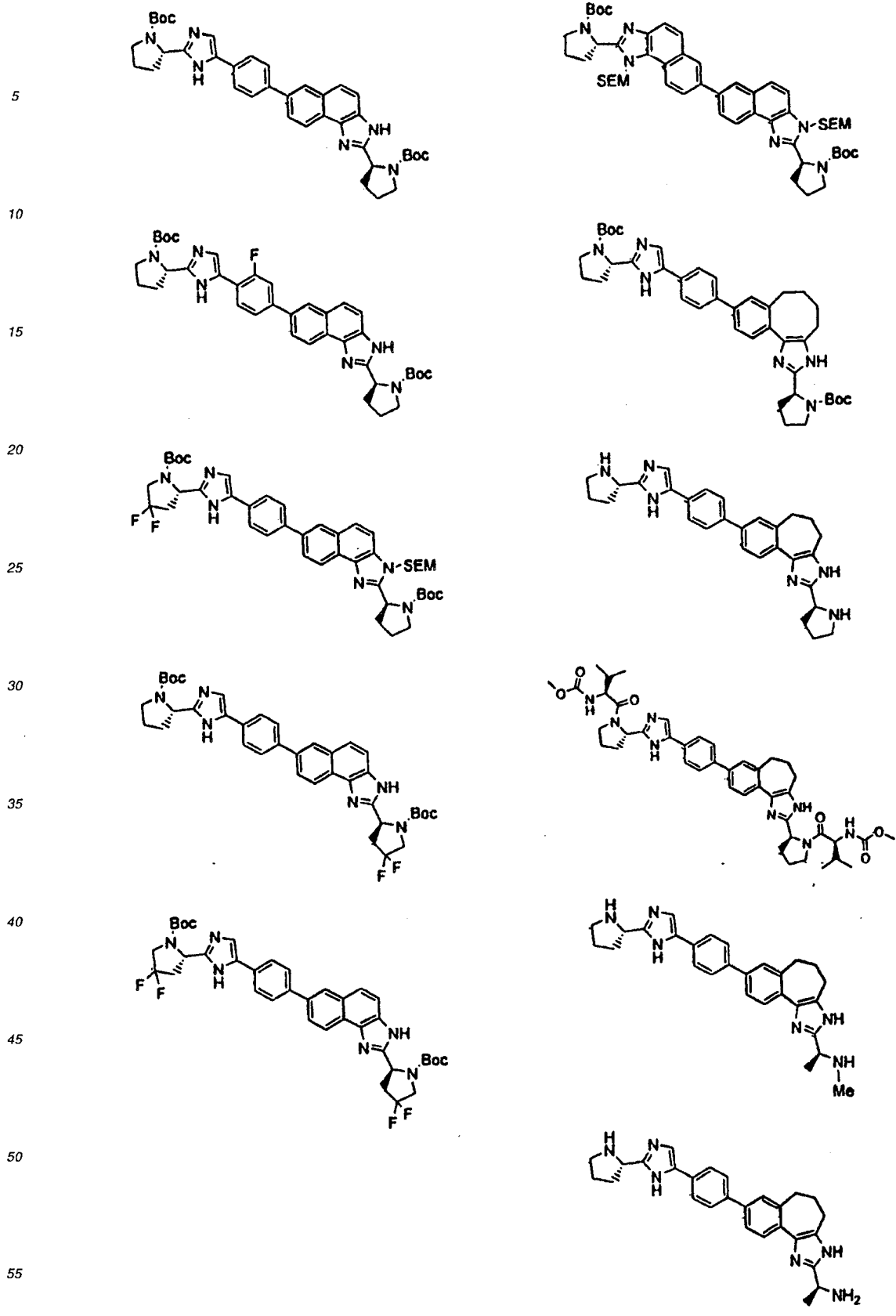
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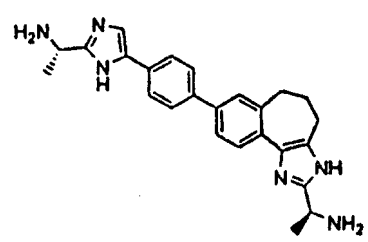
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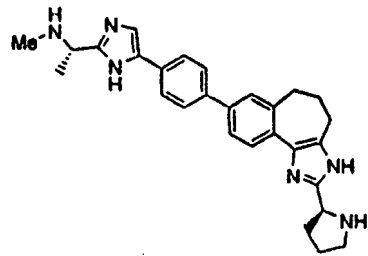
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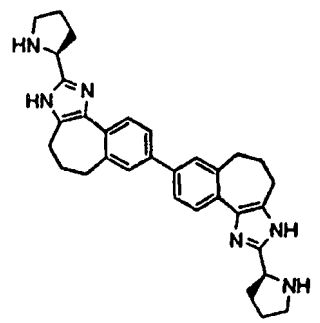
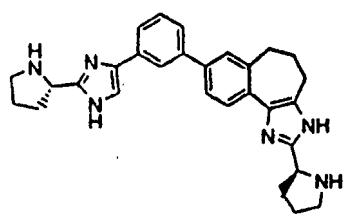
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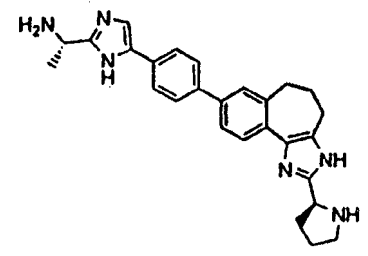
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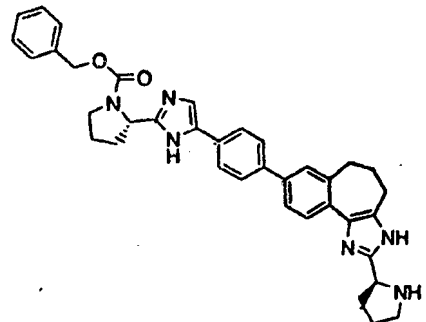
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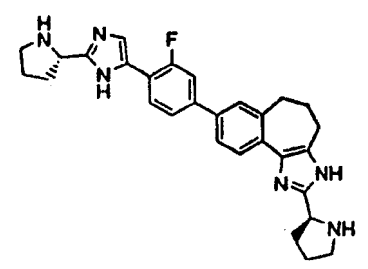
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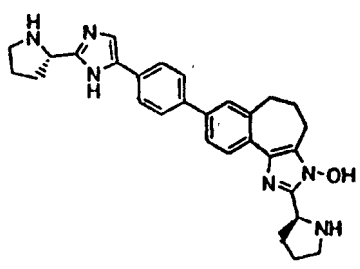
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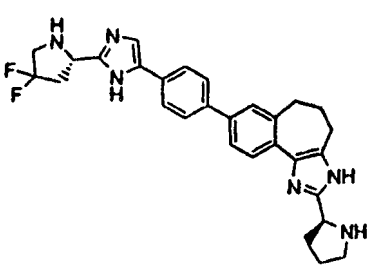
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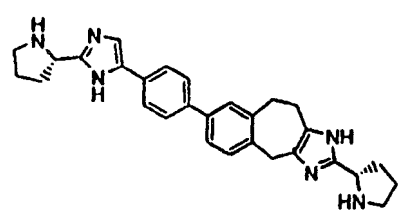
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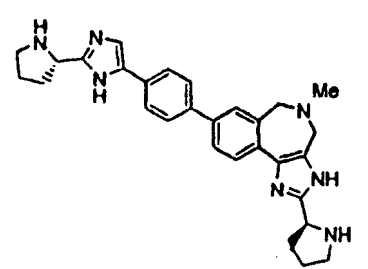
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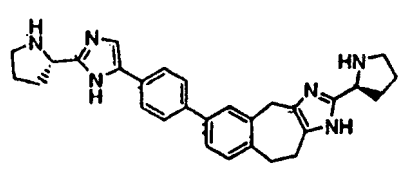
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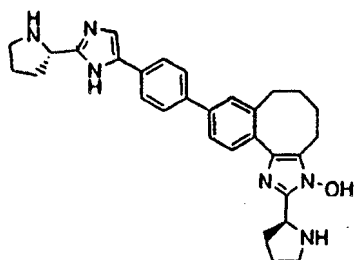


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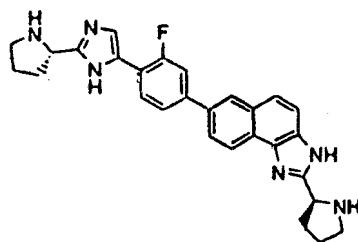


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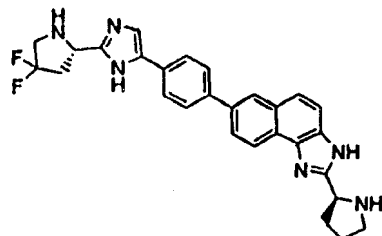
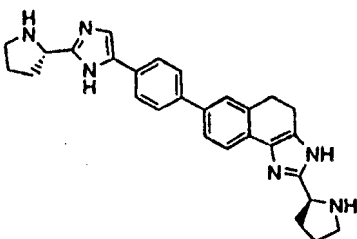
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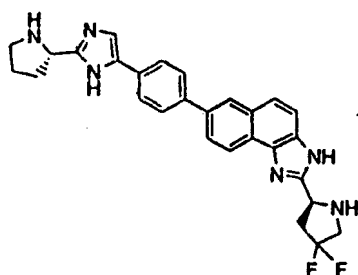
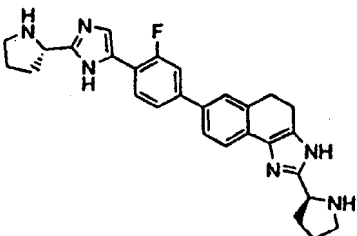
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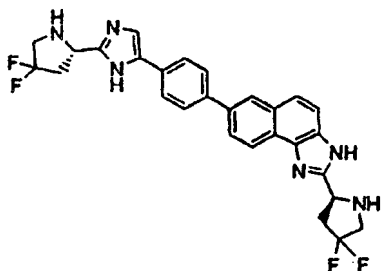
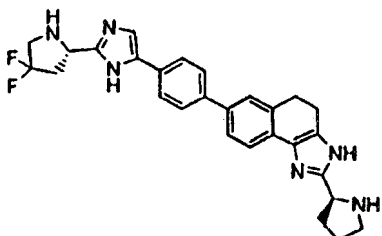


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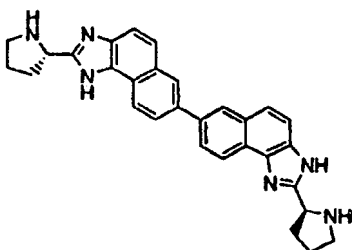
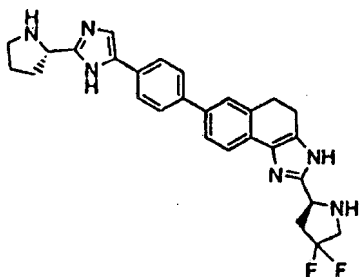
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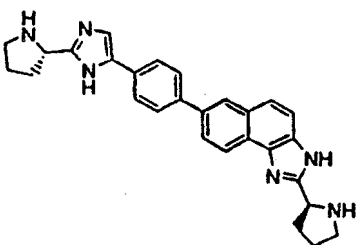
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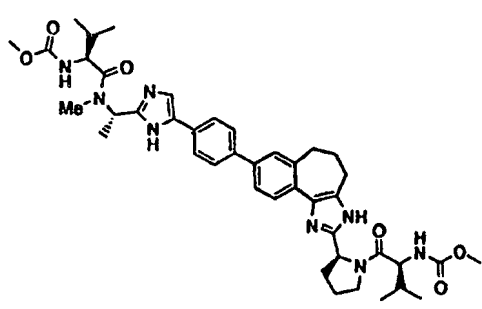
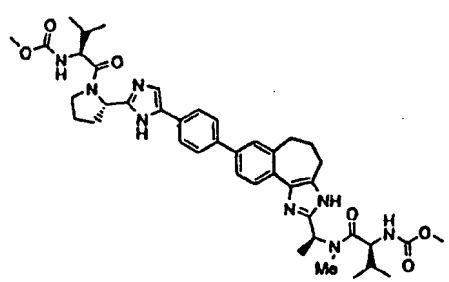
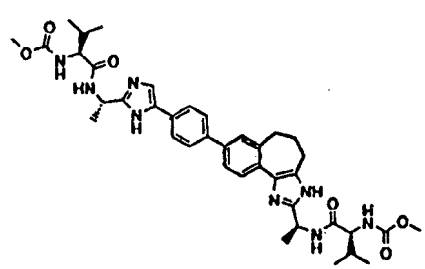
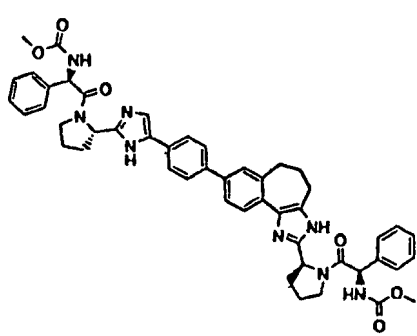
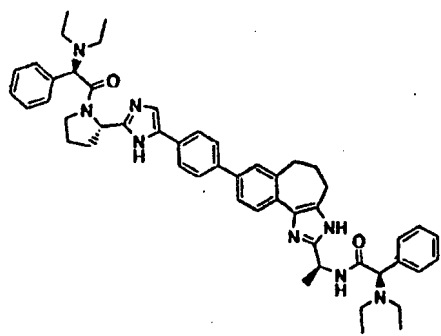
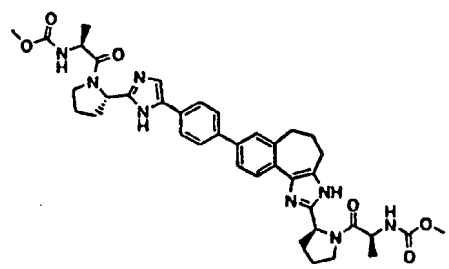
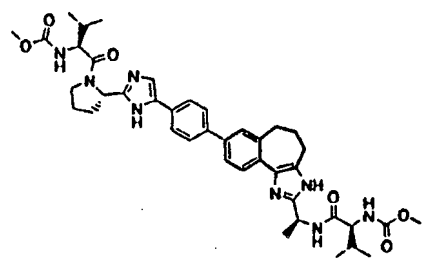
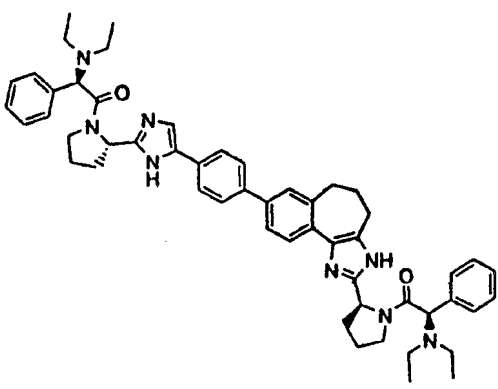
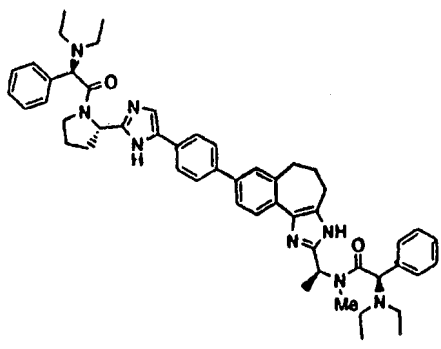
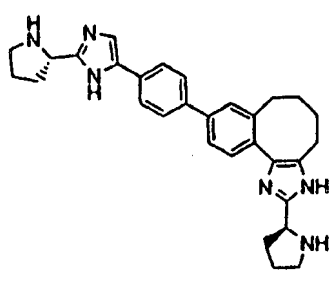
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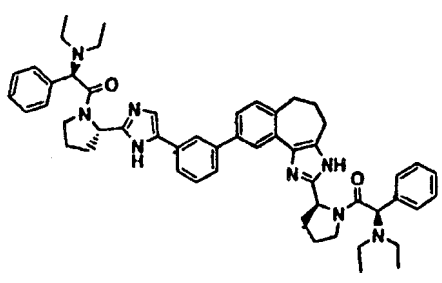
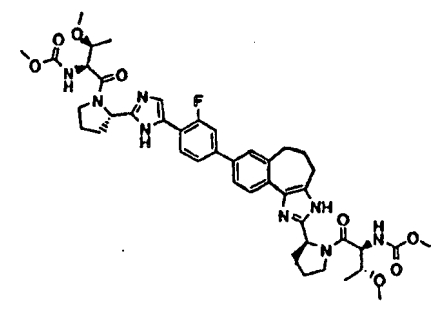
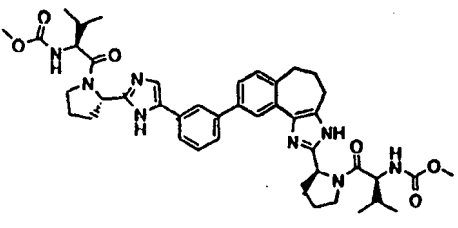
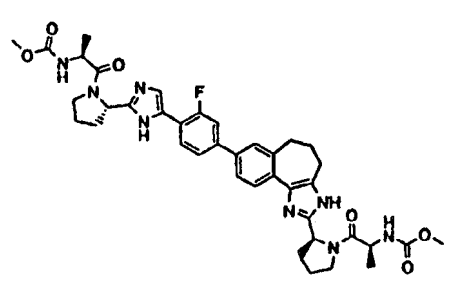
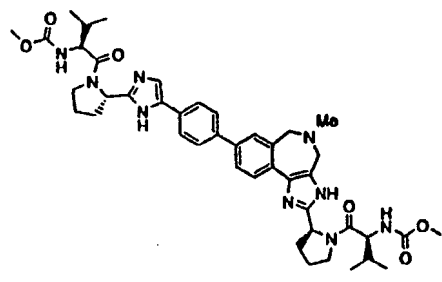
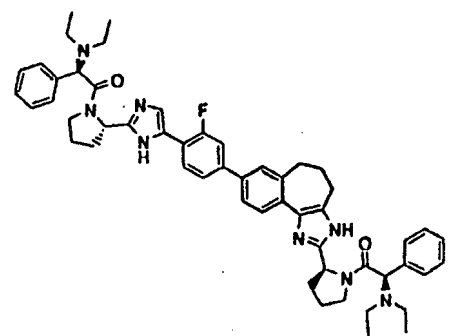
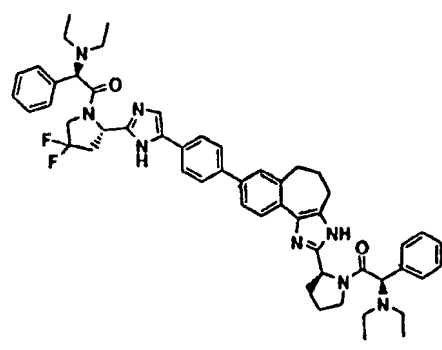
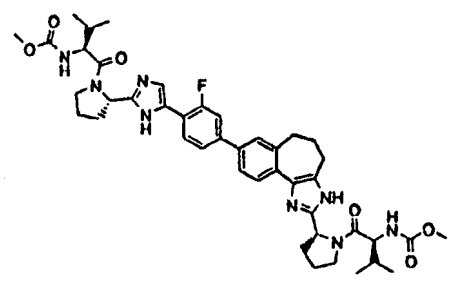
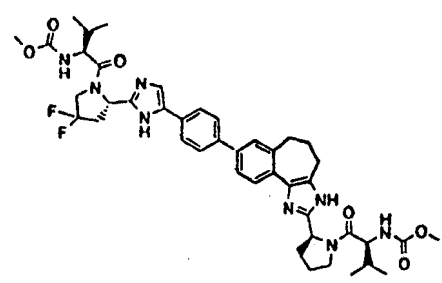
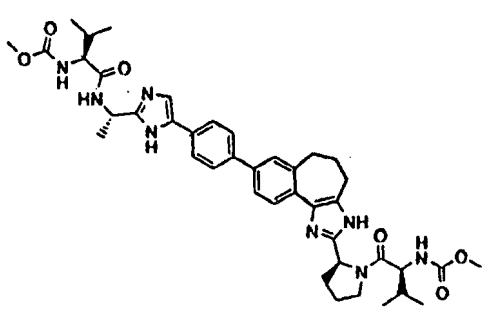
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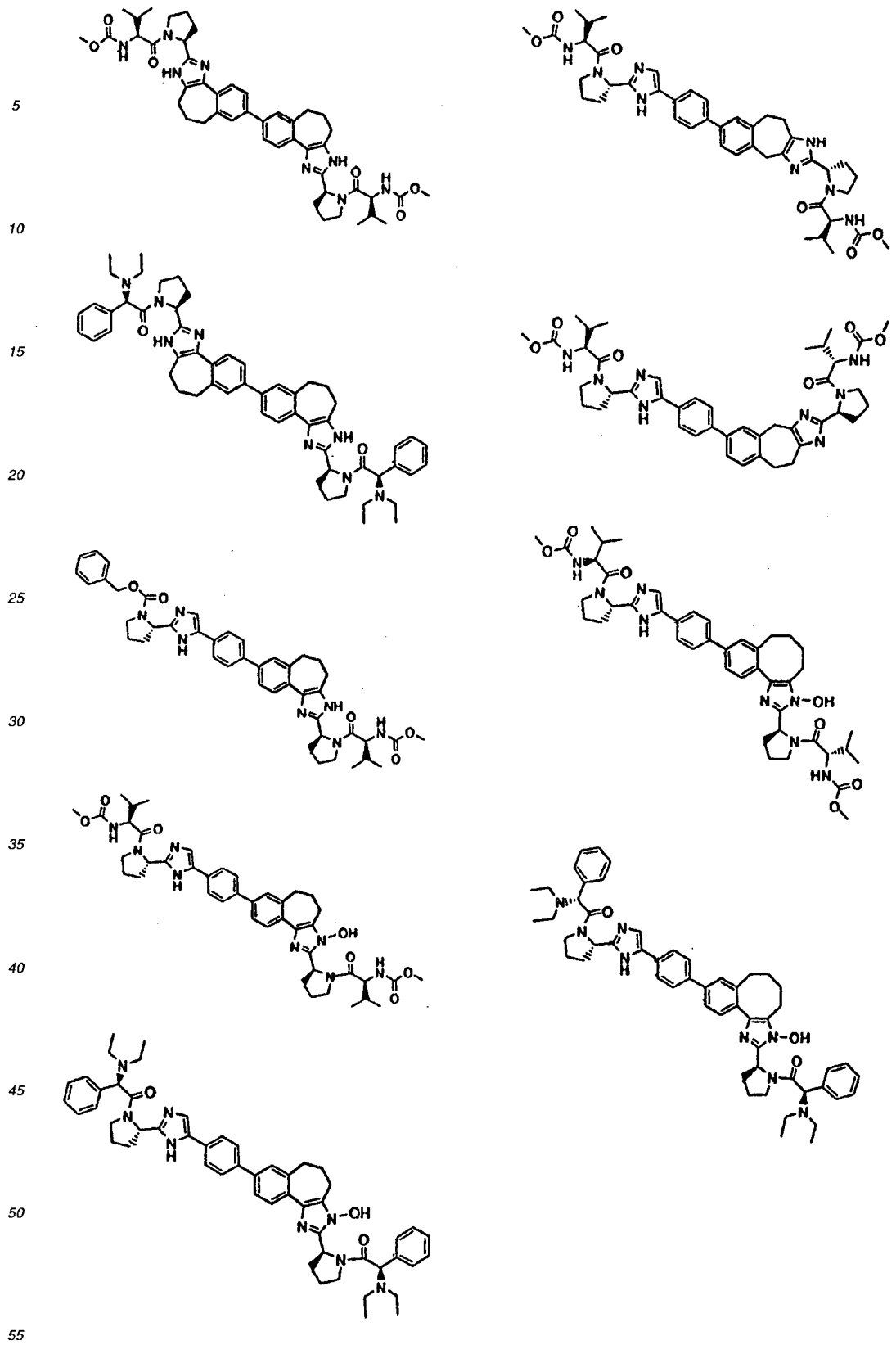
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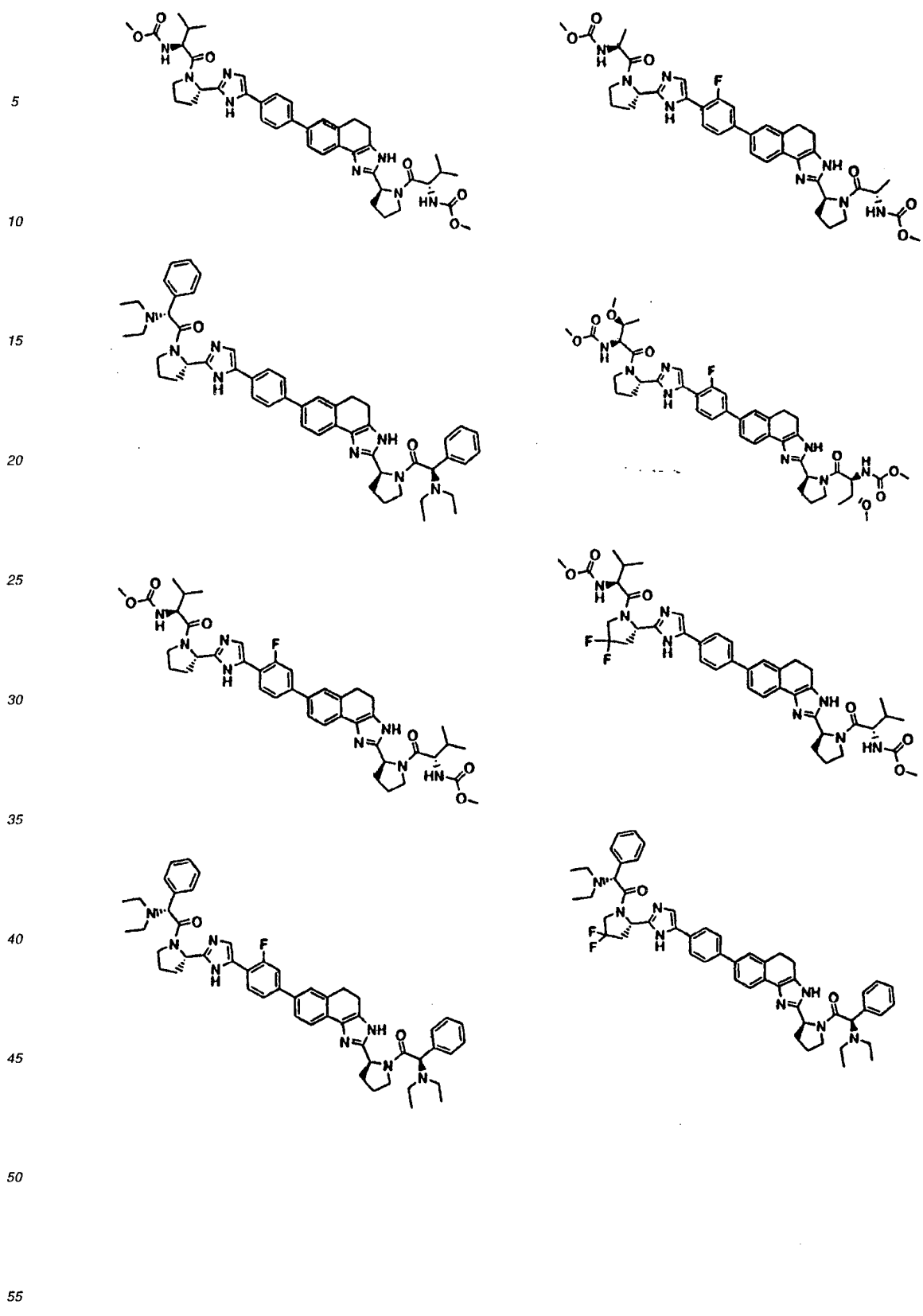
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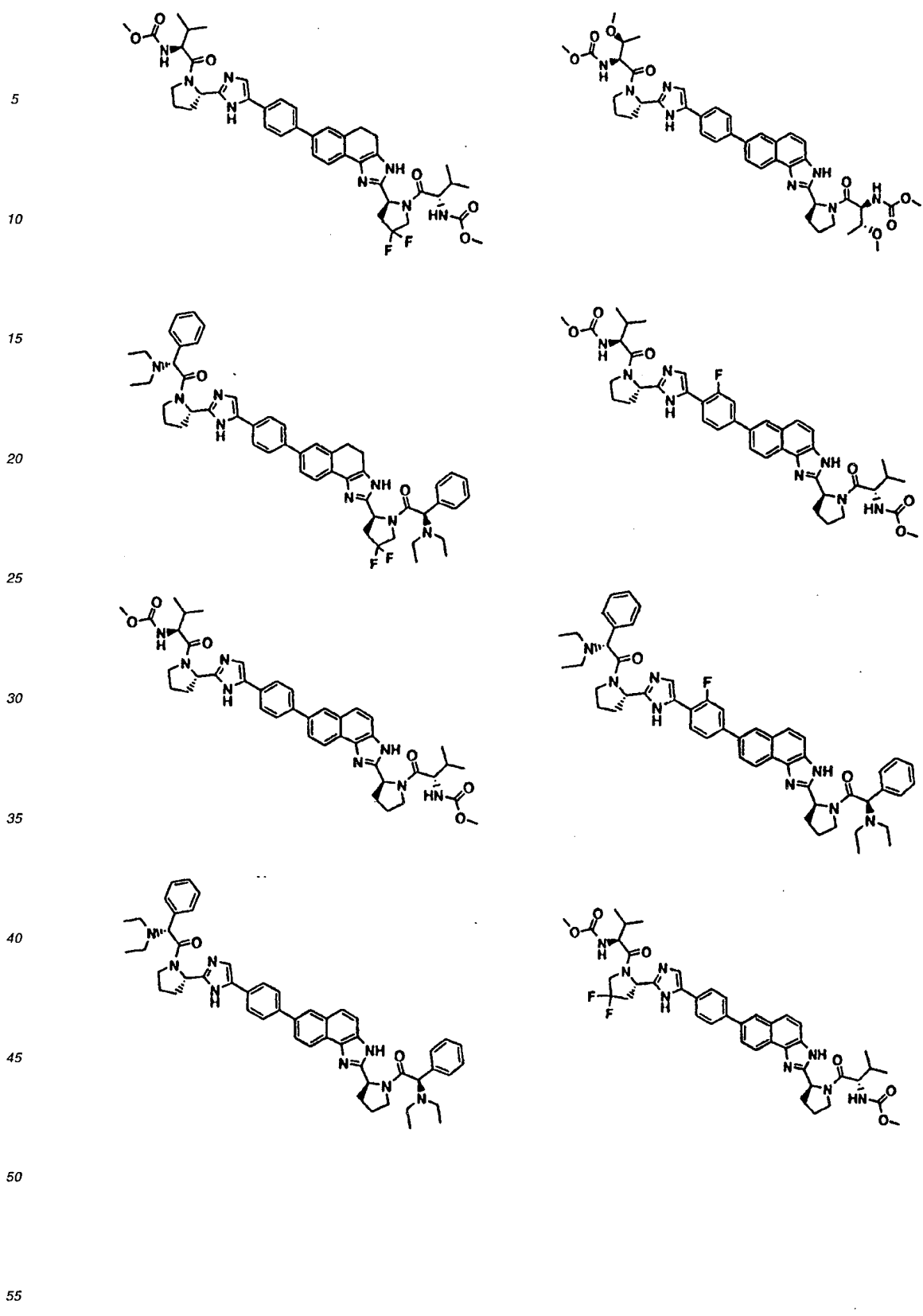


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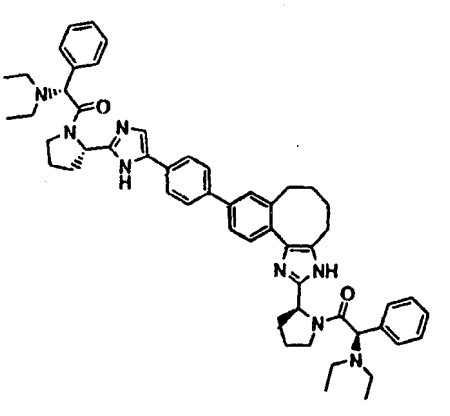
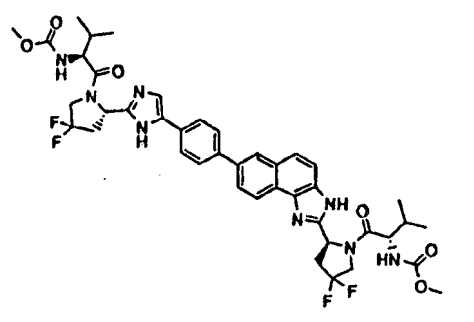
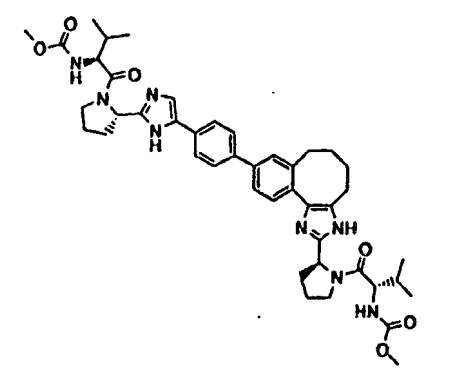
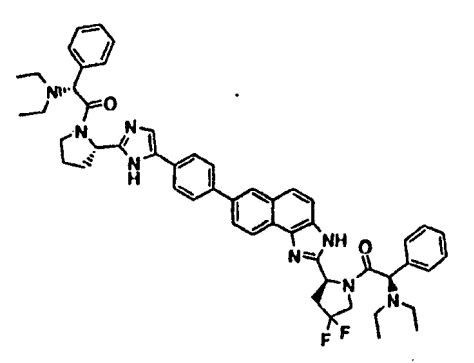
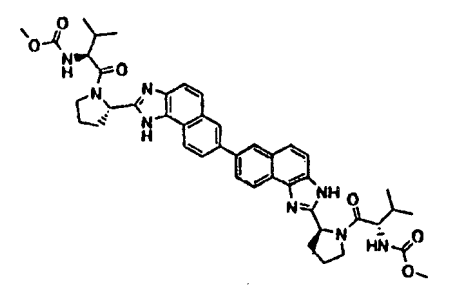
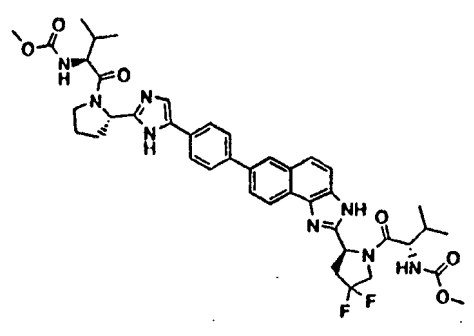
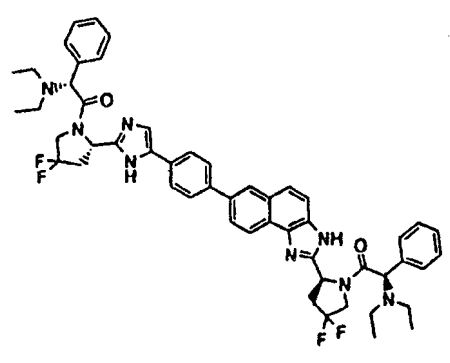
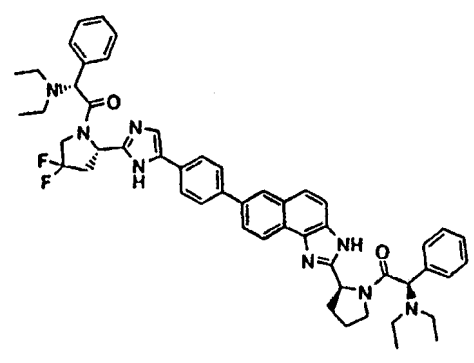
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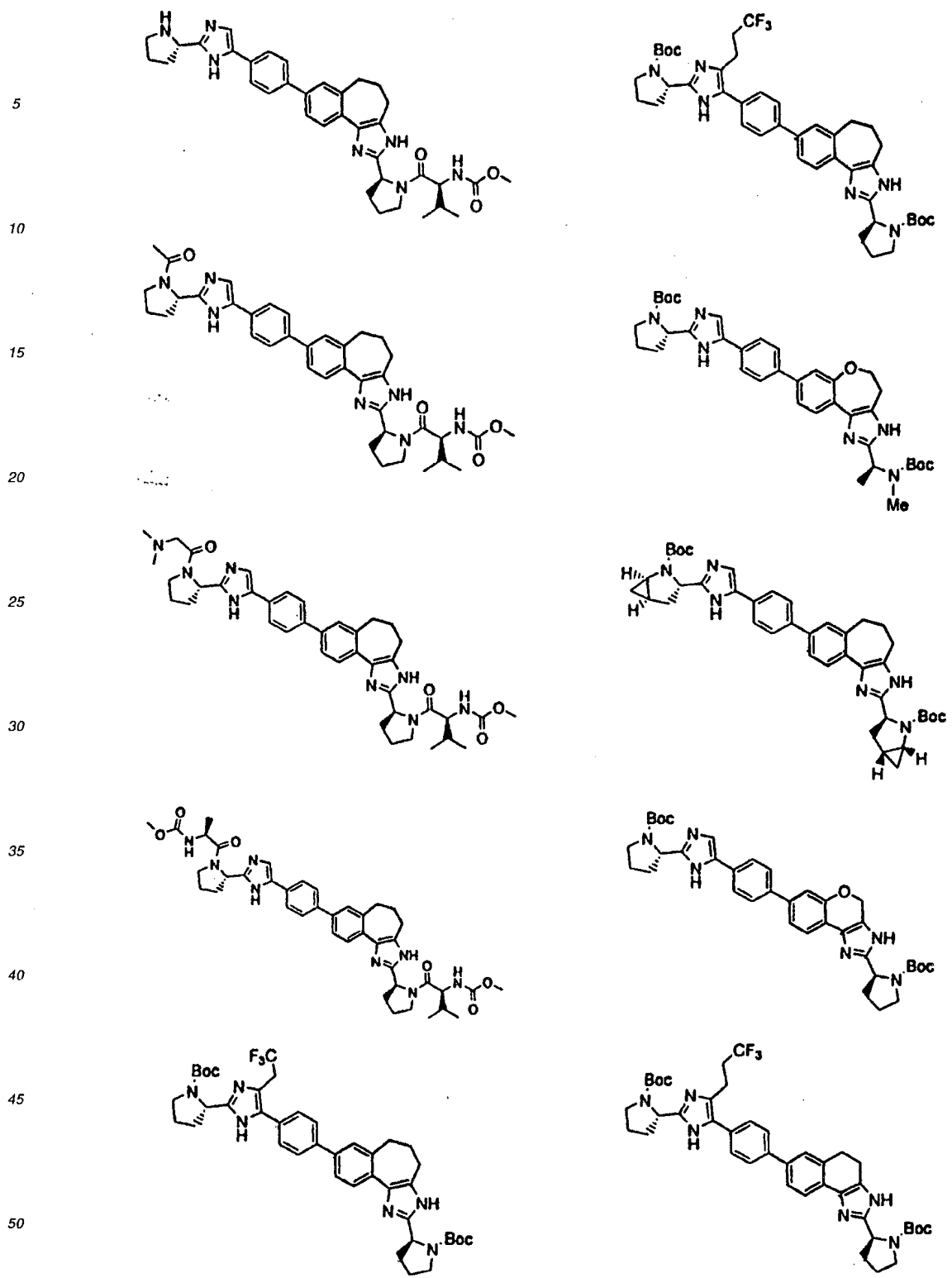
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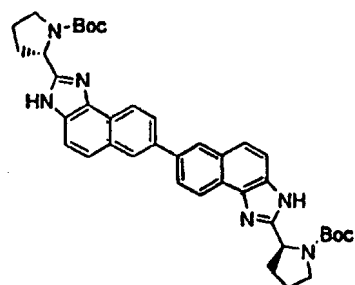
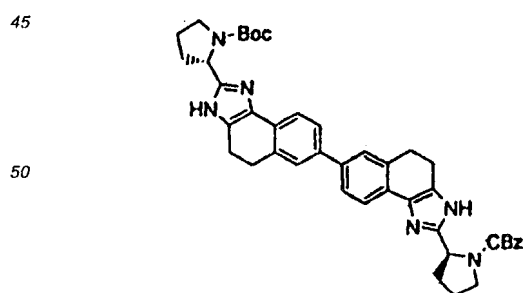
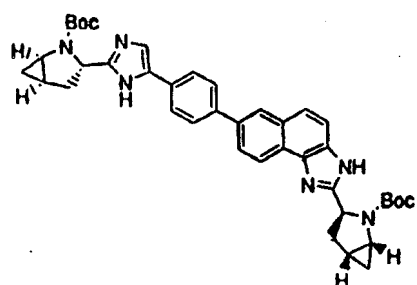
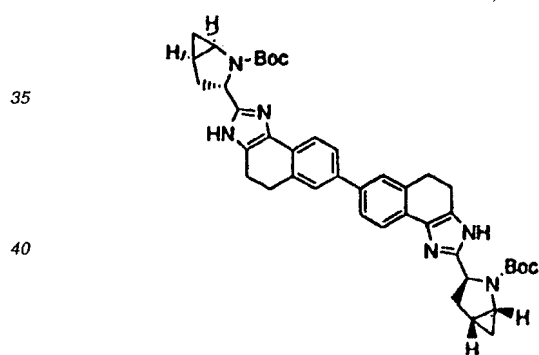
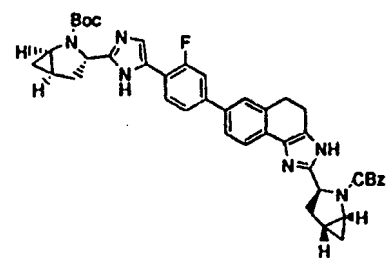
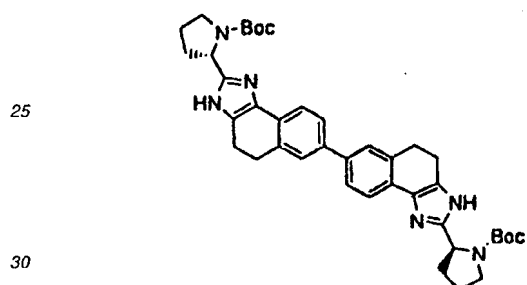
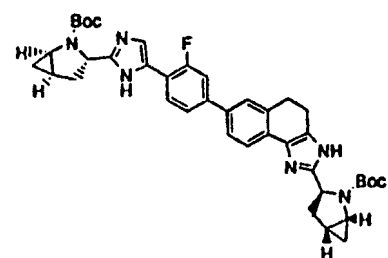
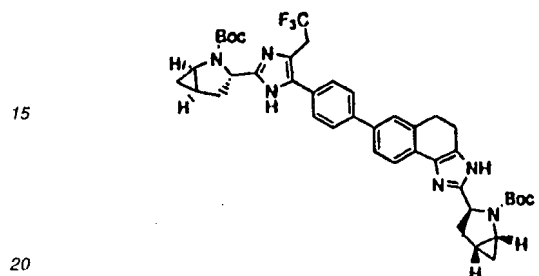
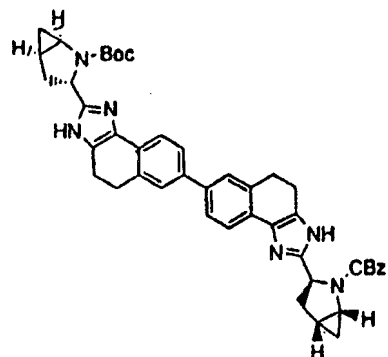
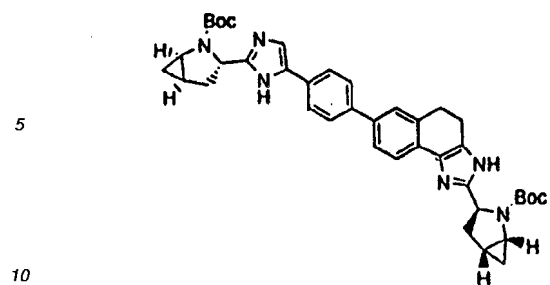
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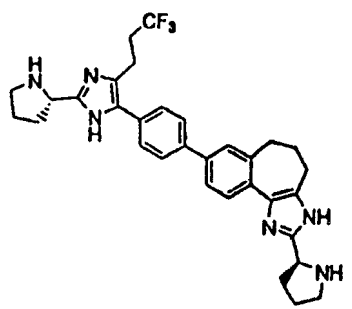
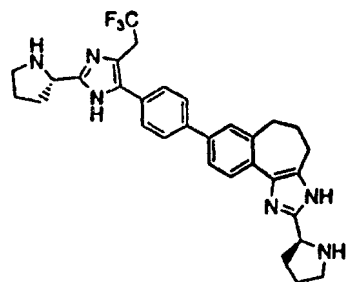
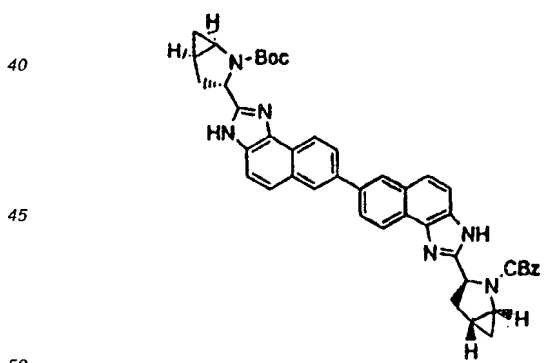
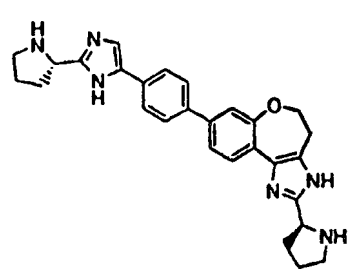
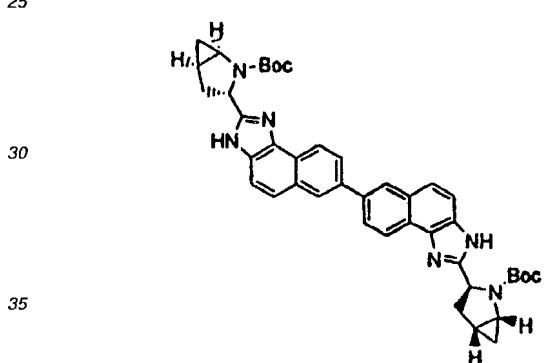
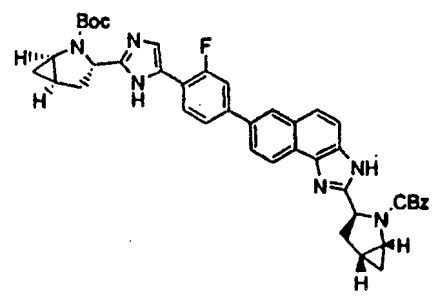
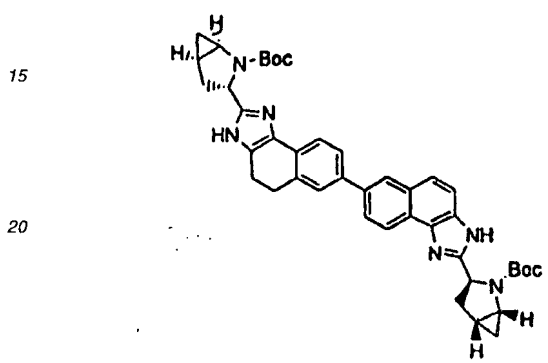
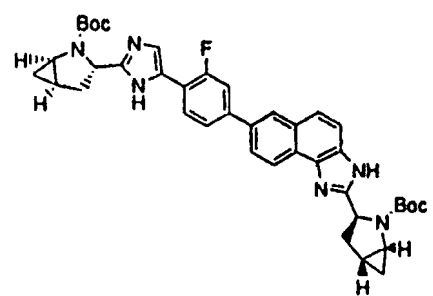
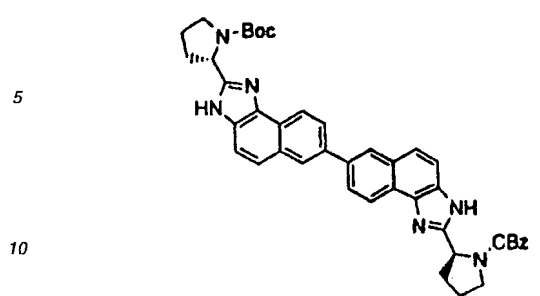
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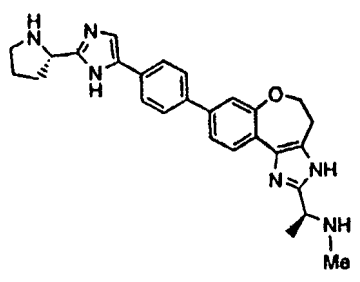


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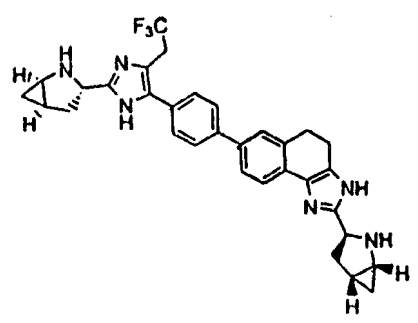


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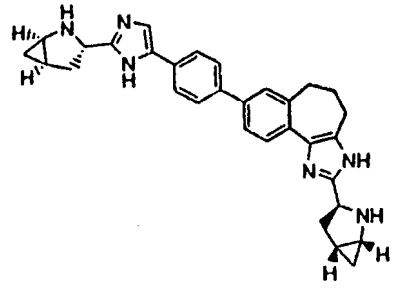
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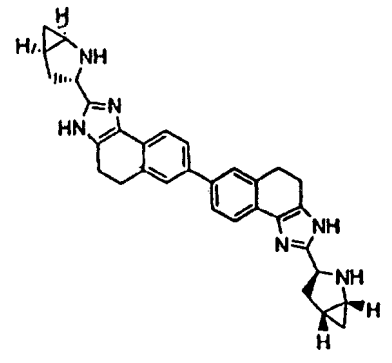
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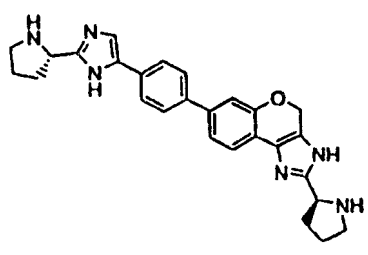
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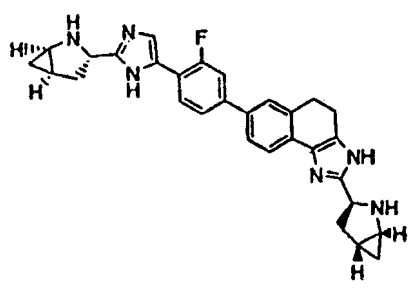
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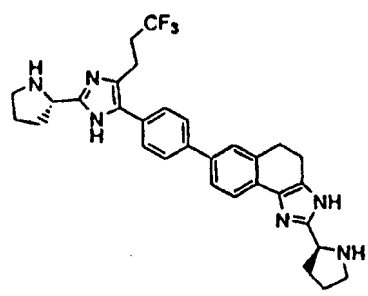
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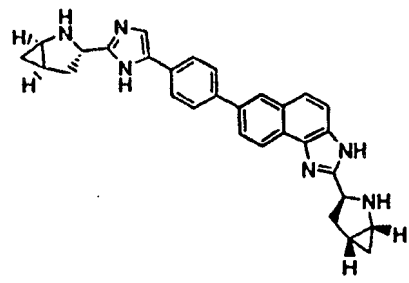
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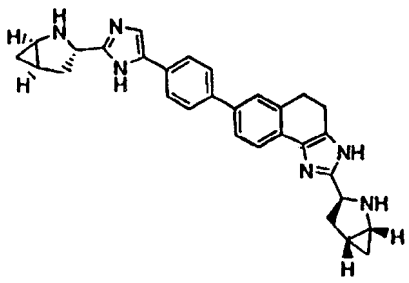
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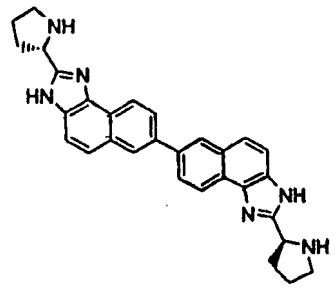
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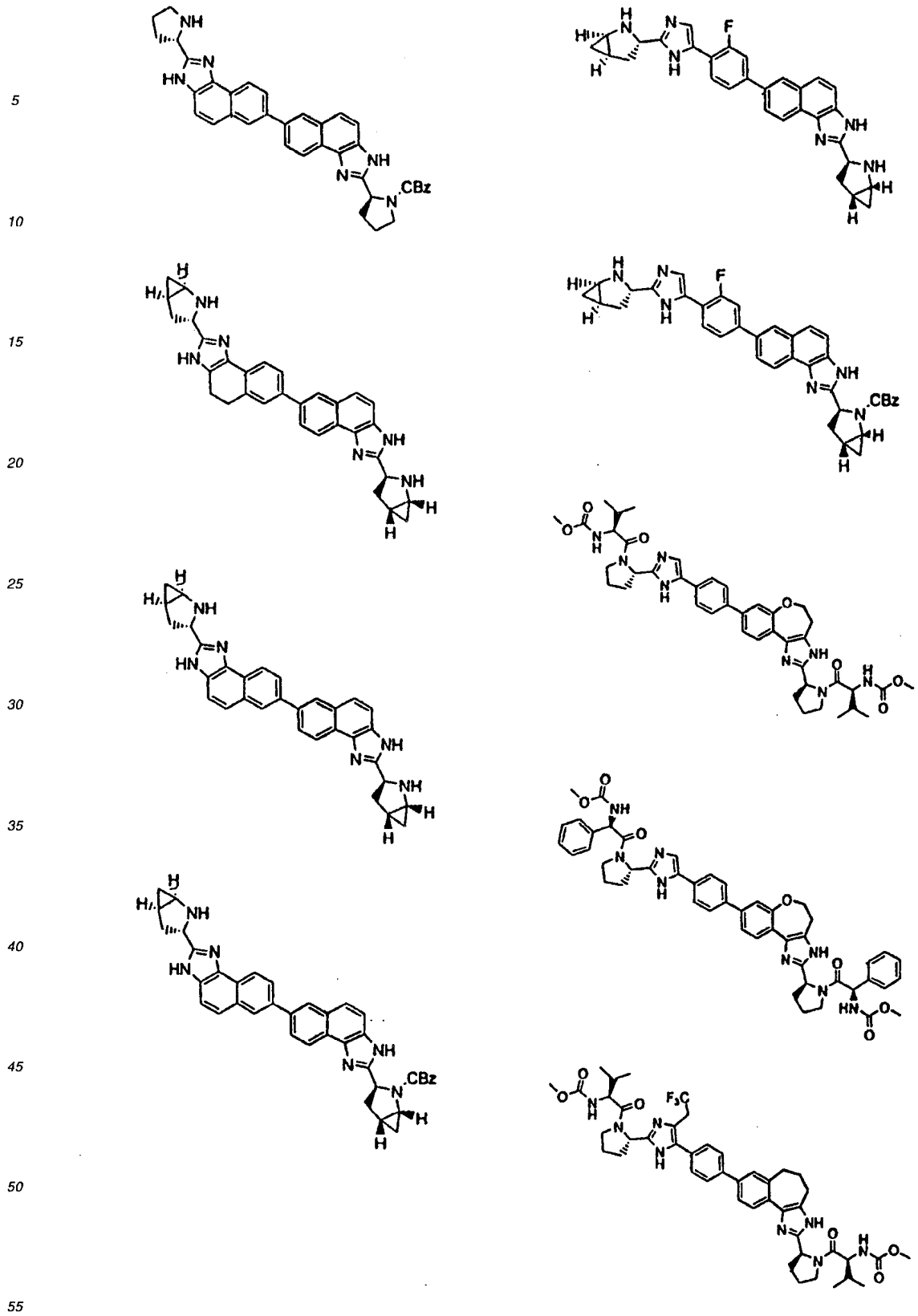
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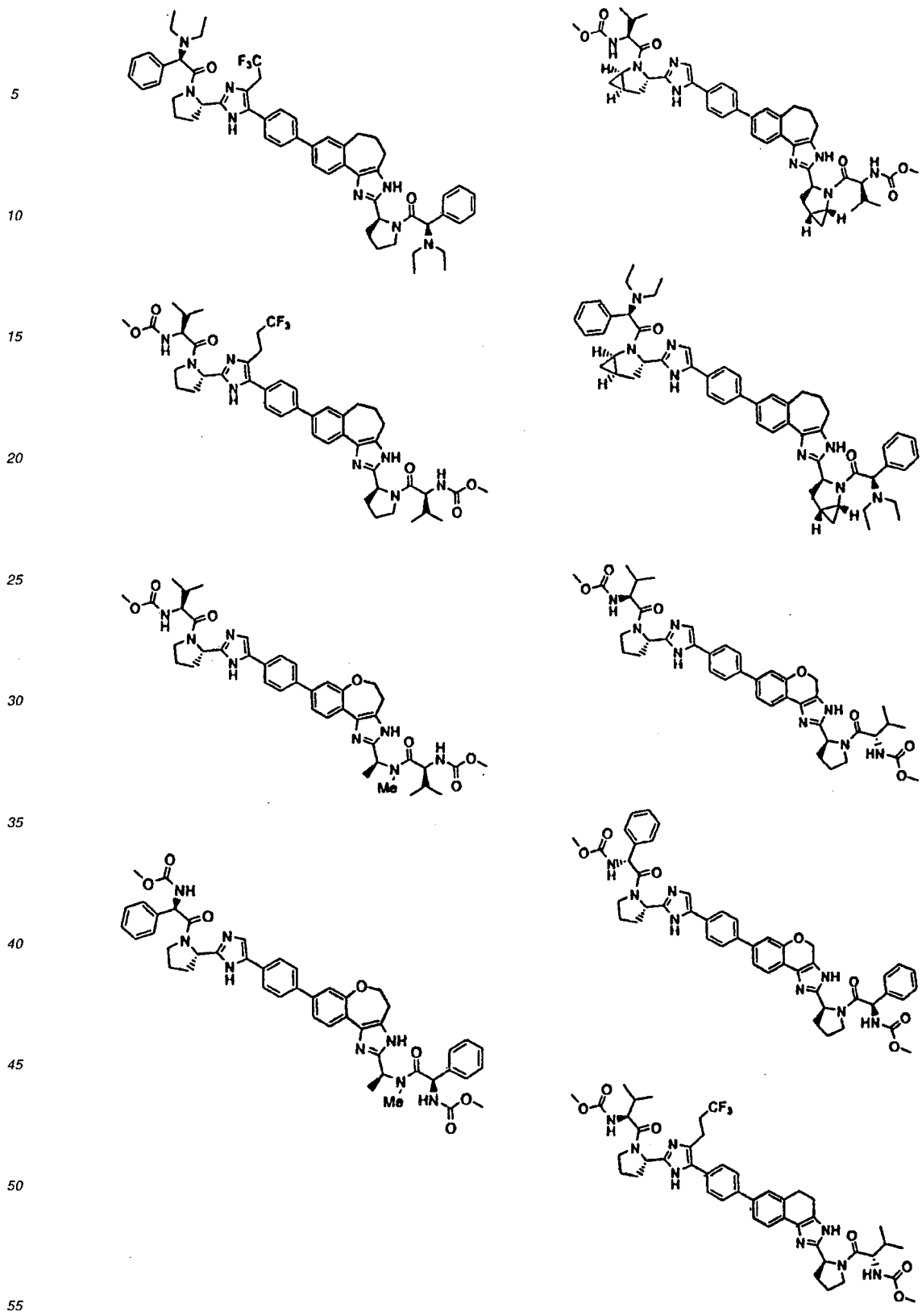


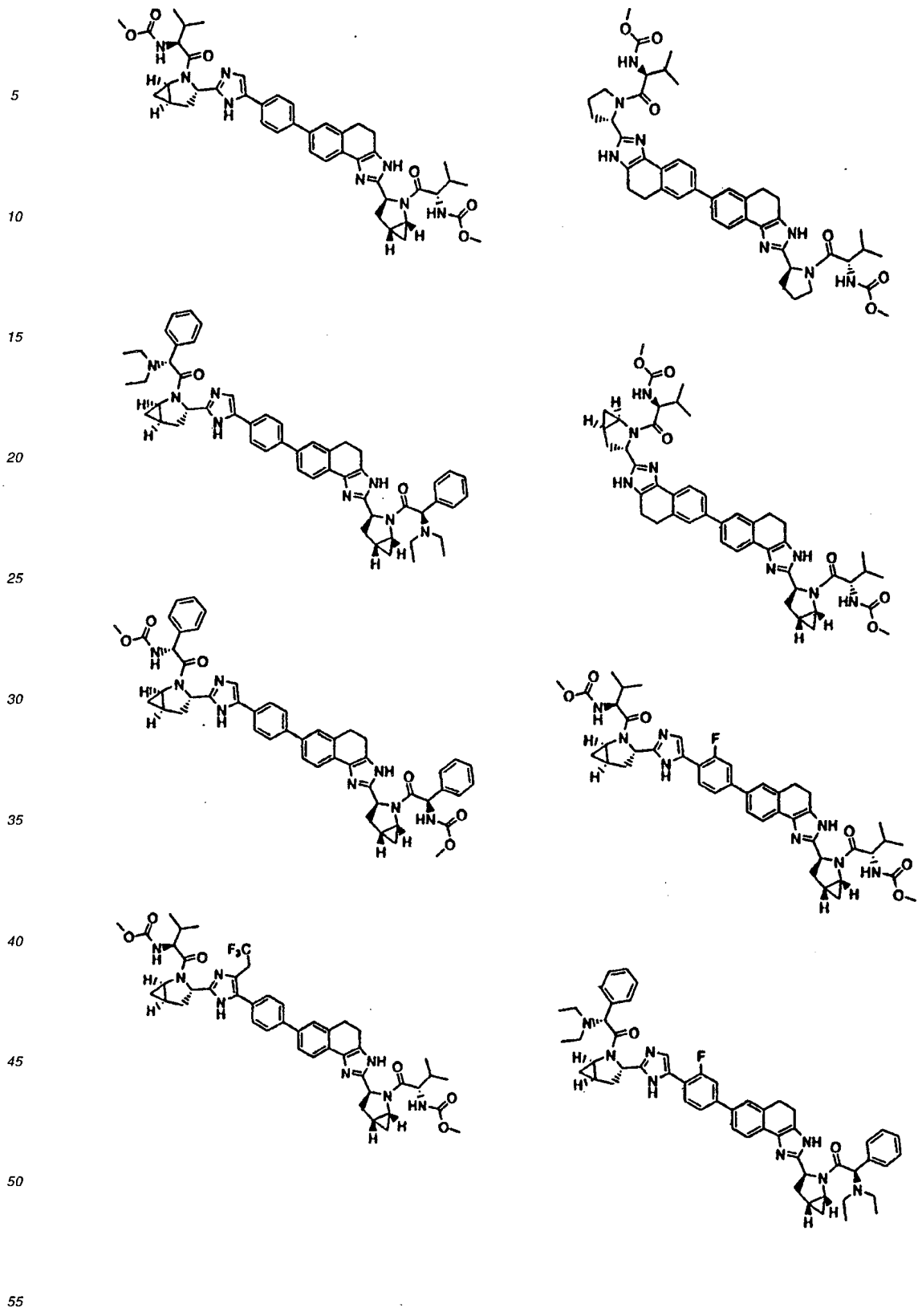
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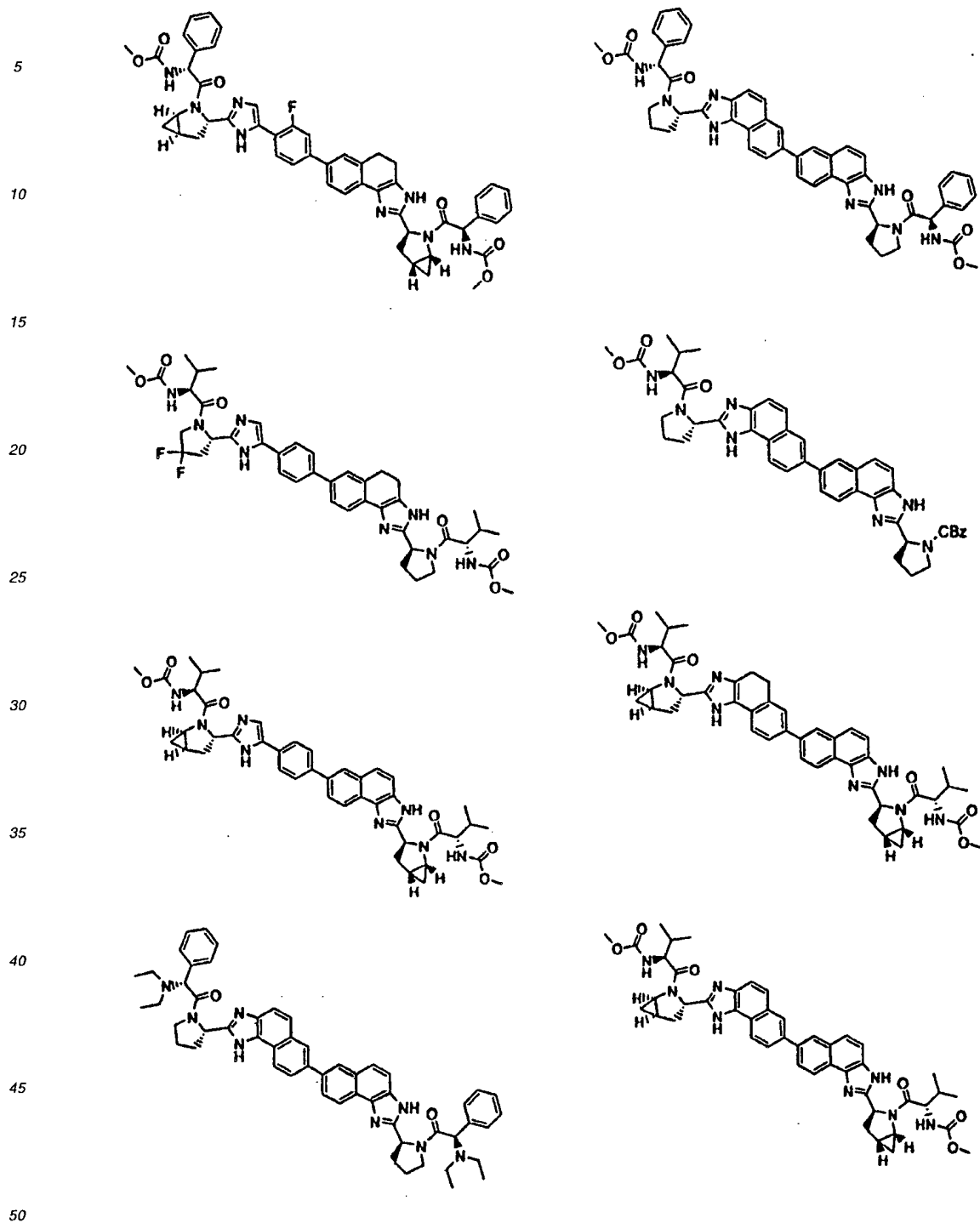
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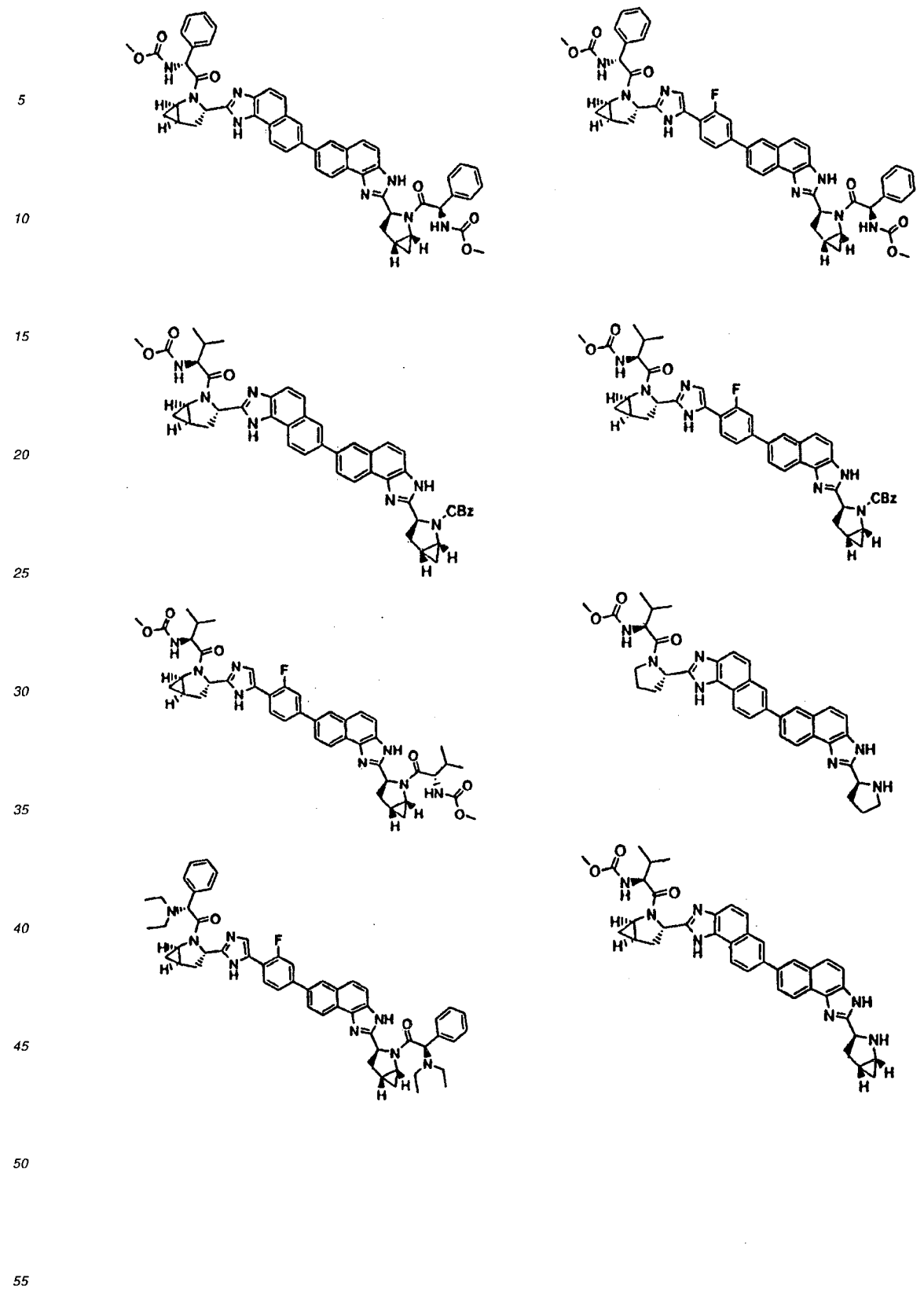




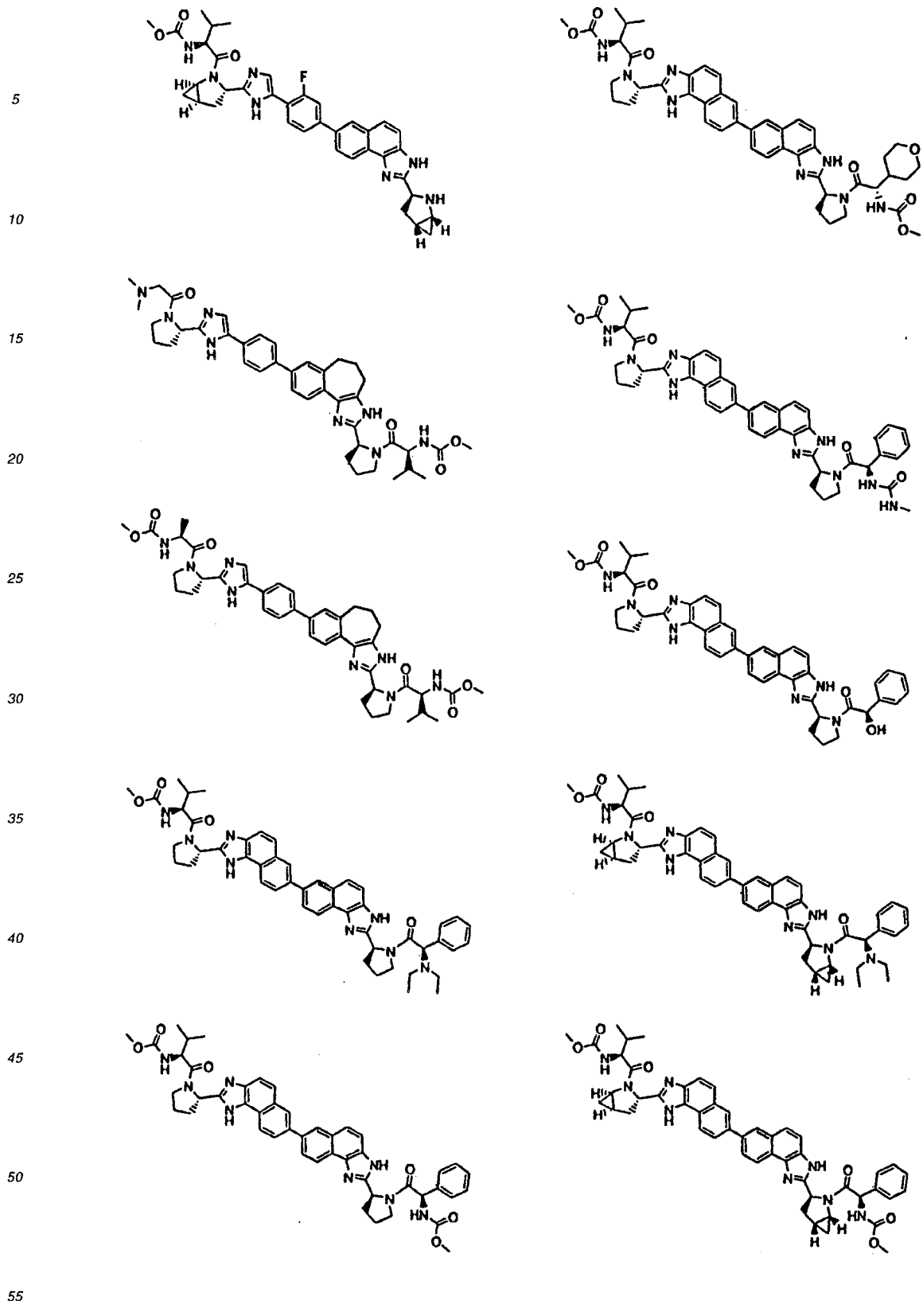
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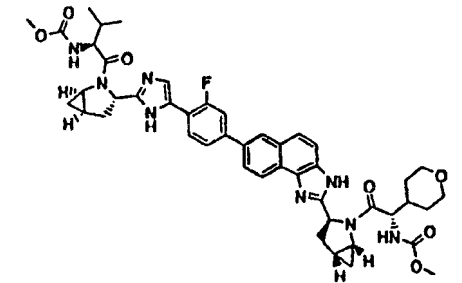
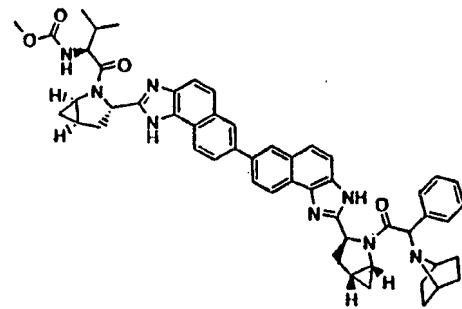
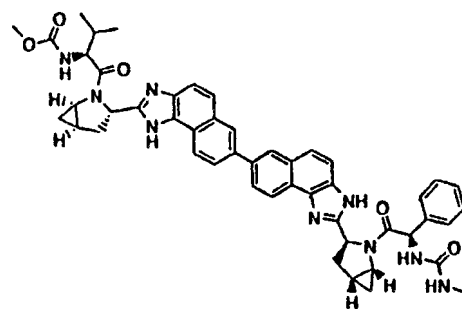
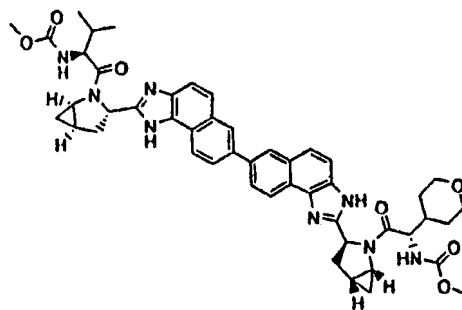
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and
or a pharmaceutically acceptable salt thereof.

11. A composition comprising a compound of any one of claims 1 to 10, or a pharmaceutically acceptable salt thereof,
and a pharmaceutically acceptable carrier and optionally
one or two additional compounds having anti-HCV activity.

12. The composition of claim 11 wherein at least one of the additional compounds is an interferon which is preferably
selected from interferon alpha 2B, pegylated interferon alpha, consensus interferon, interferon alpha 2A, and lym-

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phoblastiod interferon tau or a ribavirin.

13. A compound of any one of claims 1 to 10, or a pharmaceutically acceptable salt thereof for use in treating an HCV infection in a patient,
14. The compound for use according to claim 13 further comprising using one or two additional compounds having anti-HCV activity prior to, after or simultaneously with the compound of claim 1, or a pharmaceutically acceptable salt thereof.
15. The compound for use according to claim 14 wherein at least one of the additional compounds is an interferon which is preferably selected from interferon alpha 2B, pegylated interferon alpha, consensus interferon, interferon alpha 2A, and lymphoblastiod interferon tau or a ribavirin.

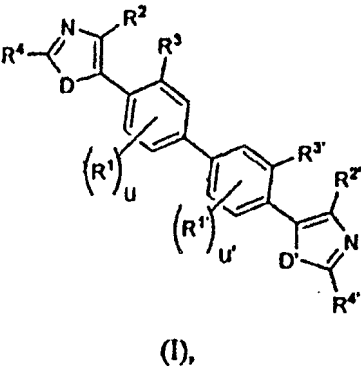
Patentansprüche

1. Verbindung der Formel (I)

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oder ein pharmazeutisch annehmbares Salz davon, wobei u und u' unabhängig 0, 1, 2 oder 3 sind; D und D' jeweils unabhängig aus NR⁵, O und S ausgewählt sind; wobei R⁵ jeweils unabhängig aus Wasserstoff, Alkoxycarbonyl, Alkyl, Arylalkoxycarbonyl, Carboxy, Haloalkyl, Hydroxy, (NR^aR^b)carbonyl und Trialkylsilylalkoxyalkyl ausgewählt ist;

R¹ und R^{1'} jeweils unabhängig aus Alkoxy, Alkoxyalkyl, Alkoxycarbonyl, Alkyl, Arylalkoxycarbonyl, Carboxy, Formyl, Halo, Haloalkyl, Hydroxy, Hydroxyalkyl, -NR^aR^b, (NR^aR^b)alkyl und (NR^aR^b)carbonyl ausgewählt sind; R² aus Wasserstoff, Alkoxycarbonyl, Alkyl, Arylalkoxycarbonyl, Carboxy, Haloalkyl und (NR^aR^b)carbonyl ausgewählt ist; und R³ aus Wasserstoff, Alkoxy, Alkoxyalkyl, Alkoxycarbonyl, Alkyl, Arylalkoxycarbonyl, Carboxy, Formyl, Halo, Haloalkyl, Hydroxy, Hydroxyalkyl, -NR^aR^b, (NR^aR^b)alkyl und (NR^aR^b)carbonyl ausgewählt ist; oder R² und R³ gemeinsam mit den Kohlenstoffatomen, an denen sie anhaften, einen 5-bis 8-gliedrigen aromatischen oder nicht-aromatischen Ring bilden, der wahlweise ein oder zwei Heteroatome enthält, die unabhängig aus Stickstoff, Sauerstoff und Schwefel ausgewählt sind; wobei der 5- bis 8-gliedrige Ring wahlweise mit einem, zwei oder drei Substituenten substituiert ist, die unabhängig aus Alkoxy, Alkoxyalkyl, Alkoxycarbonyl, Alkyl, Alkylsulfonyl, Aryl, Arylalkyl, Arylsulfonyl, Carboxy, Formyl, Halo, Haloalkoxy, Haloalkyl, Hydroxy, Hydroxyalkyl, -NR^aR^b, (NR^aR^b)alkyl, (NR^aR^b)carbonyl, Oxo und Spirocyclus ausgewählt sind; R^{2'} und R^{3'} gemeinsam mit den Kohlenstoffatomen, an denen sie anhaften, einen 5- bis 8-gliedrigen aromatischen oder nicht-aromatischen Ring bilden, der wahlweise ein oder zwei Heteroatome enthält, die unabhängig aus Stickstoff, Sauerstoff und Schwefel ausgewählt sind; wobei der 5- bis 8-gliedrige Ring wahlweise mit einem, zwei oder drei Substituenten substituiert ist, die unabhängig aus Alkoxy, Alkoxyalkyl, Alkoxycarbonyl, Alkyl, Alkylsulfonyl, Aryl, Arylalkyl, Arylsulfonyl, Carboxy, Formyl, Halo, Haloalkoxy, Haloalkyl, Hydroxy, Hydroxyalkyl, -NR^aR^b, (NR^aR^b)alkyl, (NR^aR^b)carbonyl, Oxo und Spirocyclus ausgewählt sind; R⁴ und R^{4'} jeweils unabhängig aus