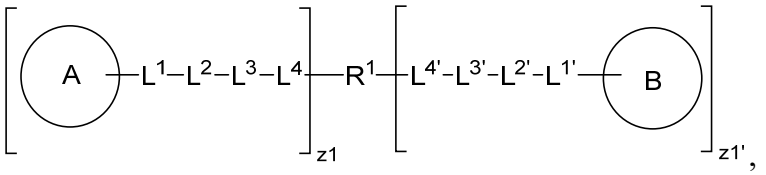
## CLAIMS

1. A compound, or a stereoisomer, tautomer, prodrug, or salt thereof, comprising the structure of Formula (V):




Formula (V)

wherein:

each 

and 

are independently a Tropomyosin receptor B (TrkB) ligand;

each of $L^1$, $L^2$, $L^3$, $L^4$, $L^{1'}$, $L^{2'}$, $L^{3'}$, and $L^{4'}$ is independently a linker, bond, or absent, wherein at least one of $L^1$, $L^2$, $L^3$, and $L^4$ comprises a linker or a bond;

$R^1$ is an oligonucleotide, a protecting group, a small molecule, a protein, an antibody, or a peptide;

z1 is 1, 2, or 3; and

z1' is 0, 1, 2, or 3.

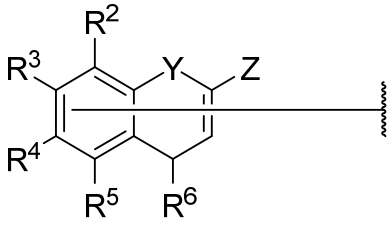
2. The compound of claim 1, or a stereoisomer, tautomer, prodrug, or salt thereof, wherein:

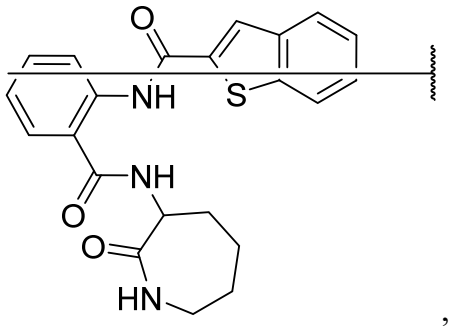
$R^1$ is an oligonucleotide;

z1 is 1; and

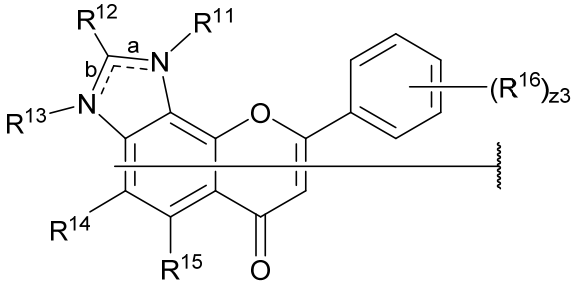
z1' is 0 or 1.

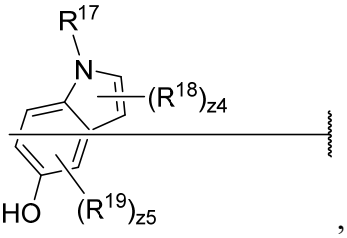
3. The compound, or a stereoisomer, tautomer, prodrug, or salt thereof, of claim 1 or 2, wherein each TrkB ligand is independently:

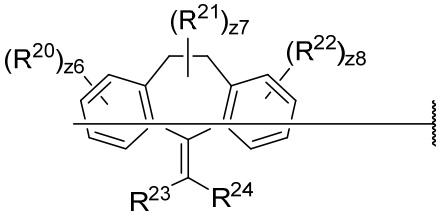


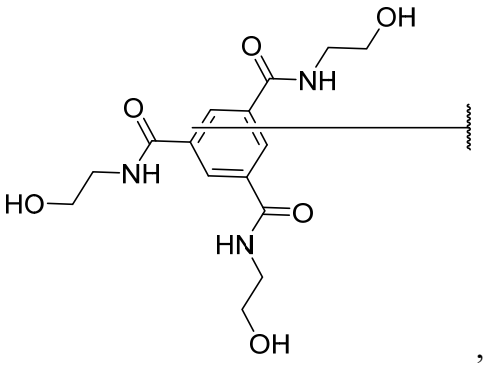
,


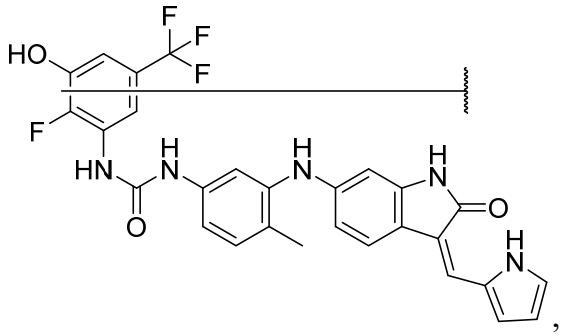
,



,


,


,


, or


,

wherein:

$R^2$ is hydrogen, $-OR^7$, $-SR^8$, or $-NR^9R^{10}$;

$R^3$ is hydrogen, $-OR^{31}$, $-SR^{32}$, or $-NR^{33}R^{34}$;

$R^4$ is hydrogen, $-OR^{35}$, $-SR^{36}$, or $-NR^{37}R^{38}$;

$R^5$ is hydrogen, $-OR^{39}$, $-SR^{40}$, or $-NR^{41}R^{42}$;

$R^6$ is hydrogen, -OH, optionally substituted -O-alkyl, optionally substituted -OAc, $-NH_2$, optionally substituted -NHAc, -SH, or =O;

$R^7$, $R^8$, $R^9$, $R^{10}$, $R^{31}$, $R^{32}$, $R^{33}$, $R^{34}$, $R^{35}$, $R^{36}$, $R^{37}$, $R^{38}$, $R^{39}$, $R^{40}$, $R^{41}$, and $R^{42}$ are each independently hydrogen, optionally substituted alkyl, optionally substituted heteroalkyl, optionally substituted cycloalkyl, optionally substituted heterocycloalkyl, optionally substituted aryl, optionally substituted heteroaryl;

Y is $CH_2$, NH, S, or O;

Z is optionally substituted aryl or optionally substituted heteroaryl;

$R^{11}$ and $R^{13}$ are each independently absent, hydrogen, or optionally substituted alkyl;

$R^{12}$, $R^{14}$, and $R^{15}$ are each independently hydrogen, optionally substituted alkyl, optionally substituted heteroalkyl, optionally substituted cycloalkyl, optionally substituted heterocycloalkyl, optionally substituted aryl, or optionally substituted heteroaryl;

$R^{16}$ is hydrogen, halogen, –CN, $–N_3$, $–SO_{n16}R^{1A}$, $–SO_{v16}NR^{16B}R^{16C}$, $–NHNR^{16B}R^{16C}$, $–ONR^{16B}R^{16C}$, $–NHC(O)NHNR^{16B}R^{16C}$, $–NHC(O)NR^{16B}R^{16C}$, $–N(O)_{m16}$, $–NR^{16B}R^{16C}$, $–C(O)R^{16D}$, $–C(O)OR^{16D}$, $–C(O)NR^{16B}R^{16C}$, $–OR^{16A}$, $-NR^{16B}SO_2R^{16A}$, $-NR^{16B}C(O)R^{16D}$; $-NR^{16B}C(O)OR^{16D}$, $–NR^{16B}OR^{16D}$, optionally substituted alkyl, optionally substituted heteroalkyl, optionally substituted cycloalkyl, optionally substituted heterocycloalkyl, optionally substituted aryl, or optionally substituted heteroaryl;

$\overset{a}{=\!-\!-}$ and $\overset{b}{=\!=}$ are each independently a single bond or a double bond, wherein if $\overset{a}{=\!-\!-}$ is a single bond, then $\overset{b}{=\!=}$ is a double bond and $R^{13}$ is absent; and further wherein if $\overset{b}{=\!=}$ is a single bond, then $\overset{a}{=\!-\!-}$ is a double bond and $R^{11}$ is absent;

$R^{16A}$, $R^{16B}$, $R^{16C}$, $R^{16D}$ are each independently hydrogen, halogen, $–CF_3$, $–CCl_3$, $–CBr_3$, $–CI_3$, –COOH, $–CONH_2$, substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, or substituted or unsubstituted heteroaryl; $R^{16B}$ and $R^{16C}$ substituents bonded to the same nitrogen atom may optionally be joined to form a substituted or unsubstituted heterocycloalkyl or substituted or unsubstituted heteroaryl;

$R^{17}$, $R^{18}$, and $R^{19}$ are each independently hydrogen, optionally substituted alkyl, optionally substituted heteroalkyl, optionally substituted cycloalkyl, optionally substituted heterocycloalkyl, optionally substituted aryl, or optionally substituted heteroaryl;

$R^{20}$ is hydrogen, halogen, –CN, $–N_3$, $–SO_{n20}R^{1A}$, $–SO_{v20}NR^{20B}R^{20C}$, $–NHNR^{20B}R^{20C}$, $–ONR^{20B}R^{20C}$, $–NHC(O)NHNR^{20B}R^{20C}$, $–NHC(O)NR^{20B}R^{20C}$, $–N(O)_{m20}$, $–NR^{20B}R^{20C}$, $–C(O)R^{20D}$, $–C(O)OR^{20D}$, $–C(O)NR^{20B}R^{20C}$, $–OR^{20A}$, $-NR^{20B}SO_2R^{20A}$, $-NR^{20B}C(O)R^{20D}$; $-NR^{20B}C(O)OR^{20D}$, $–NR^{20B}OR^{20D}$, optionally substituted alkyl, optionally substituted heteroalkyl, optionally substituted cycloalkyl, optionally substituted heterocycloalkyl, optionally substituted aryl, or optionally substituted heteroaryl;

$R^{21}$ is hydrogen, halogen, –CN, $–N_3$, $–SO_{n21}R^{1A}$, $–SO_{v21}NR^{21B}R^{21C}$, $–NHNR^{21B}R^{21C}$, $–ONR^{21B}R^{21C}$, $–NHC(O)NHNR^{21B}R^{21C}$, $–NHC(O)NR^{21B}R^{21C}$, $–N(O)_{m21}$, $–NR^{21B}R^{21C}$, $–C(O)R^{21D}$, $–C(O)OR^{21D}$, $–C(O)NR^{21B}R^{21C}$, $–OR^{21A}$, $-NR^{21B}SO_2R^{21A}$, $-NR^{21B}C(O)R^{21D}$; $-NR^{21B}C(O)OR^{21D}$, $–NR^{21B}OR^{21D}$, optionally substituted alkyl, optionally substituted heteroalkyl, optionally substituted cycloalkyl, optionally substituted heterocycloalkyl, optionally substituted aryl, or optionally substituted heteroaryl;

$R^{22}$ and $R^{23}$ are each independently hydrogen, optionally substituted alkyl, optionally substituted heteroalkyl, optionally substituted cycloalkyl, optionally substituted heterocycloalkyl, optionally substituted aryl, or optionally substituted heteroaryl;

$R^{24}$ is hydrogen, halogen, –CN, $–N_3$, $–SO_{n24}R^{1A}$, $–SO_{v24}NR^{24B}R^{24C}$, $–NHNR^{24B}R^{24C}$, $–ONR^{24B}R^{24C}$, $–NHC(O)NHNR^{24B}R^{24C}$, $–NHC(O)NR^{24B}R^{24C}$, $–N(O)_{m24}$, $–NR^{24B}R^{24C}$, $–C(O)R^{24D}$, $–C(O)OR^{24D}$, $–C(O)NR^{24B}R^{24C}$, $–OR^{24A}$, $-NR^{24B}SO_2R^{24A}$, $-NR^{24B}C(O)R^{24D}$; $-NR^{24B}C(O)OR^{24D}$, $–NR^{24B}OR^{24D}$, optionally substituted alkyl, optionally substituted heteroalkyl, optionally substituted cycloalkyl, optionally substituted heterocycloalkyl, optionally substituted aryl, or optionally substituted heteroaryl;

$R^{20A}$, $R^{20B}$, $R^{20C}$, $R^{20D}$, $R^{21A}$, $R^{21B}$, $R^{21C}$, $R^{21D}$, $R^{24A}$, $R^{24B}$, $R^{24C}$, and $R^{24D}$ are each independently hydrogen, halogen, $–CF_3$, $–CCl_3$, $–CBr_3$, $–CI_3$,–COOH, $–CONH_2$, substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, or substituted or unsubstituted heteroaryl; $R^{20B}$, $R^{20C}$, $R^{21B}$, $R^{21C}$, $R^{24B}$, $R^{24C}$, $R^{24B}$, and $R^{24C}$ substituents bonded to the same nitrogen atom may optionally be joined to form a substituted or unsubstituted heterocycloalkyl or substituted or unsubstituted heteroaryl;

n16, n20, n21, n23, n24, z6, and z8 are each independently 0, 1, 2, 3, or 4;

v16, v20, v21, m16, m20, m21, and m24 are each independently 1 or 2;

z3 is 0, 1, 2, 3, 4, or 5;

z4 and z7 are each independently 0, 1, or 2;

z5 is 0, 1, 2, or 3; and

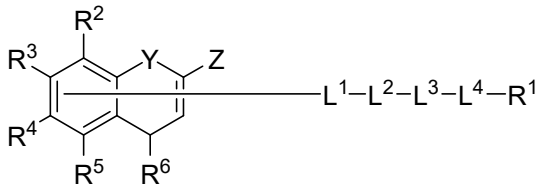
z6 and z8 are each independently 0, 1, 2, 3, or 4.

4. The compound, or a stereoisomer, tautomer, prodrug, or salt thereof, of claim 1 or 2, wherein each TrkB ligand is independently 3,7-dihydroxyflavone, 3,7,8,2′-tetrahydroxyflavone,

7,3′-dihydroxyflavone, 7,8,2′-trihydroxyflavone, 7,8,3′-trihydroxyflavone, 7,8,4′-trihydroxyflavone, diosmetin (5,7,3′-trihydroxy-4′-methoxyflavone), 7-hydroxy-4′-methoxyflavone, 8-hydroxy-7-methoxyflavone, eutropoflavin (4′-dimethylamino-7,8-dihydroxyflavone), norwogonin (5,7,8-trihydroxyflavone), R7, R13, tropoflavin (7,8-dihydroxyflavone), quercetin (3,3′,4′,5,7-pentahydroxyflavone), apigenin (4′,5,7-trihydroxyflavone), isocoumarin, gossypetin (3,5,7,8,3′,4′-hexahydroxyflavone), 2-methyl-8-phenylchromeno[7,8-*d*]imidazol-6(3*H*)-one, 8-phenylchromeno[7,8-*d*]imidazol-6(3*H*)-one, 4-oxo-2-phenyl-4*H*-chromene-7,8-diyl diacetate, ANA-12, an anti-TrkB antibody, or derivatives thereof.

5. A compound, or a stereoisomer, tautomer, prodrug, or salt thereof,

comprising the structure of Formula (II):




Formula (II),

wherein:

each of $L^1$, $L^2$, $L^3$, and $L^4$ is independently a linker, bond, or absent, wherein at least one of $L^1$, $L^2$, $L^3$, and $L^4$ comprises a linker or a bond;

$R^1$ is an oligonucleotide, a protecting group, a small molecule, a protein, an antibody, or a peptide;

$R^2$ is hydrogen, -$OR^7$, -$SR^8$, or -$NR^9R^{10}$;

$R^3$ is hydrogen, -$OR^{31}$, -$SR^{32}$, or -$NR^{33}R^{34}$;

$R^4$ is hydrogen, -$OR^{35}$, -$SR^{36}$, or -$NR^{37}R^{38}$;

$R^5$ is hydrogen, -$OR^{39}$, -$SR^{40}$, or -$NR^{41}R^{42}$;

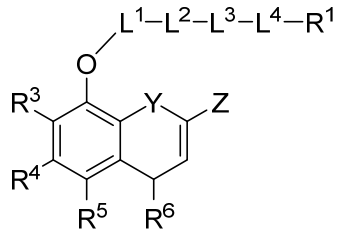
$R^6$ is hydrogen, -OH, optionally substituted -O-alkyl, optionally substituted -OAc, -$NH_2$, optionally substituted -NHAc, -SH, or =O;

$R^7$, $R^8$, $R^9$, $R^{10}$, $R^{31}$, $R^{32}$, $R^{33}$, $R^{34}$, $R^{35}$, $R^{36}$, $R^{37}$, $R^{38}$, $R^{39}$, $R^{40}$, $R^{41}$, and $R^{42}$ are each independently hydrogen, optionally substituted alkyl, optionally substituted heteroalkyl, optionally substituted cycloalkyl, optionally substituted heterocycloalkyl, optionally substituted aryl, optionally substituted heteroaryl;

Y is $CH_2$, NH, S, or O; and

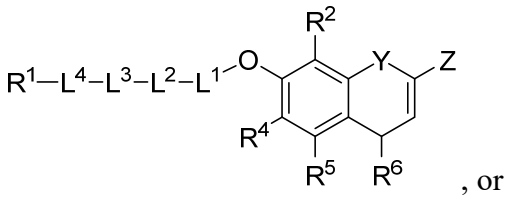
Z is optionally substituted aryl or optionally substituted heteroaryl.

6. The compound, or a stereoisomer, tautomer, prodrug, or salt thereof, of claim 5, wherein the compound comprises the structure of Formula (II-a):



Formula (II-a),

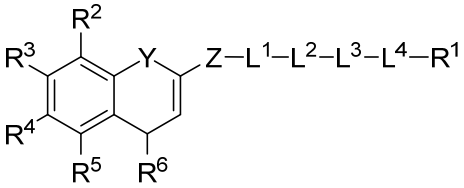
the structure of Formula (II-b):



, or

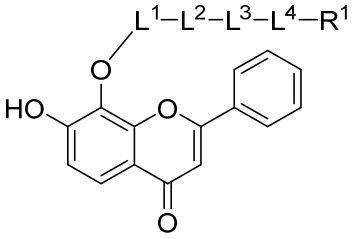
Formula (II-b)

the structure of Formula (II-c):



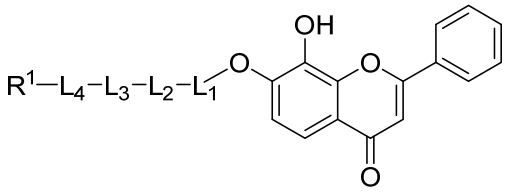
Formula (II-c).

7. The compound, or a stereoisomer, tautomer, prodrug, or salt thereof, of claim 5, wherein the compound comprises the structure of Formula (III-a):



Formula (III-a),

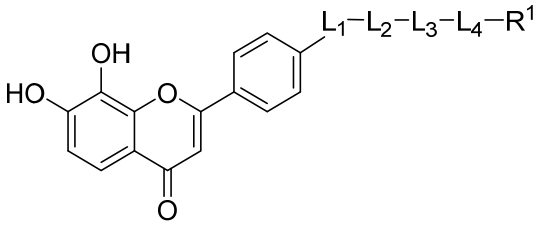
the structure of Formula (III-b):



, or

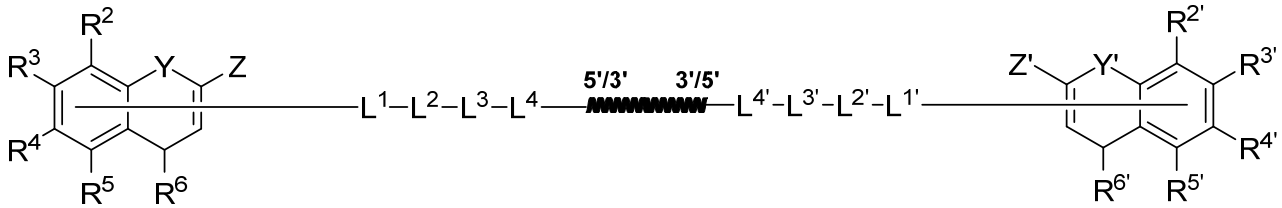
Formula (III-b)

the structure of Formula (III-c-1):




Formula (III-c-1).

8. A compound, or a stereoisomer, tautomer, prodrug, or salt thereof, wherein the compound comprises the structure of Formula (II"):




Formula (II"),

wherein:

~~~~~~~~~~ is an oligonucleotide;

each of $L^1$, $L^2$, $L^3$, $L^4$, $L^{1'}$, $L^{2'}$, $L^{3'}$, and $L^{4'}$ is independently a linker, bond, or absent, wherein at least one of $L^1$, $L^2$, $L^3$, and $L^4$ comprises a linker or a bond, and, wherein at least one of $L^{1'}$, $L^{2'}$, $L^{3'}$, and $L^{4'}$ comprises a linker or a bond;

$R^2$ is hydrogen, $-OR^7$, $-SR^8$, or $-NR^9R^{10}$;

$R^{2'}$ is hydrogen, $-OR^{7'}$, $-SR^{8'}$, or $-NR^{9'}R^{10'}$;

$R^3$ is hydrogen, $-OR^{31}$, $-SR^{32}$, or $-NR^{33}R^{34}$;

$R^{3'}$ is hydrogen, $-OR^{31'}$, $-SR^{32'}$, or $-NR^{33'}R^{34'}$;

$R^4$ is hydrogen, $-OR^{35}$, $-SR^{36}$, or $-NR^{37}R^{38}$;

$R^{4'}$ is hydrogen, $-OR^{35'}$, $-SR^{36'}$, or $-NR^{37'}R^{38'}$;
~~~~~~~~~~

$R^5$ is hydrogen, -$OR^{39}$, -$SR^{40}$, or -$NR^{41}R^{42}$;

$R^{5'}$ is hydrogen, -$OR^{39'}$, -$SR^{40'}$, or -$NR^{41'}R^{42'}$;

$R^6$ is hydrogen, -OH, optionally substituted -O-alkyl, optionally substituted -OAc, -$NH_2$, optionally substituted -NHAc, -SH, or =O;

$R^{6'}$ is hydrogen, -OH, optionally substituted -O-alkyl, optionally substituted -OAc, -$NH_2$, optionally substituted -NHAc, -SH, or =O;

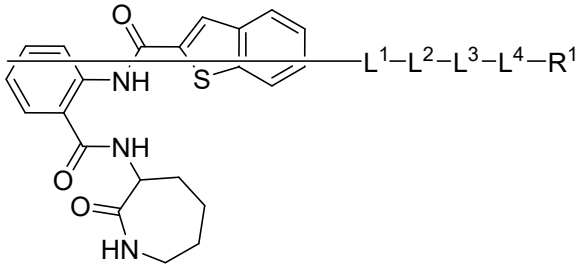
$R^7$, $R^{7'}$, $R^8$, $R^{8'}$, $R^9$, $R^{9'}$, $R^{10}$, $R^{10'}$, $R^{31}$, $R^{31'}$, $R^{32}$, $R^{32'}$, $R^{33}$, $R^{33'}$, $R^{34}$, $R^{34'}$, $R^{35}$, $R^{35'}$, $R^{36}$, $R^{36'}$, $R^{37}$, $R^{37'}$, $R^{38}$, $R^{38'}$, $R^{39}$, $R^{39'}$, $R^{40}$, $R^{40'}$, $R^{41}$, $R^{41'}$, $R^{42}$, and $R^{42'}$ are each independently hydrogen, optionally substituted alkyl, optionally substituted heteroalkyl, optionally substituted cycloalkyl, optionally substituted heterocycloalkyl, optionally substituted aryl, optionally substituted heteroaryl;

Y and Y' are each independently $CH_2$, NH, S, or O; and

Z and Z' are each independently optionally substituted aryl or optionally substituted heteroaryl.

9. A compound, or a stereoisomer, tautomer, prodrug, or salt thereof,

comprising the structure of Formula (IV):

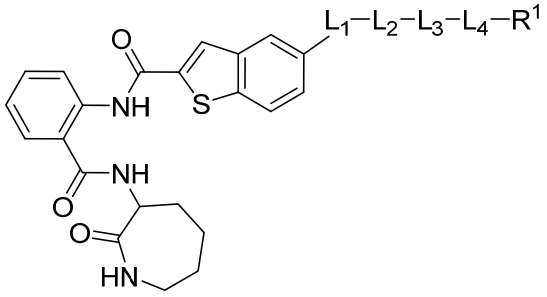



Formula (IV),

wherein each of $L^1$, $L^2$, $L^3$, and $L^4$ is independently a linker, bond, or absent, wherein at least one of $L^1$, $L^2$, $L^3$, and $L^4$ comprises a linker or a bond; and

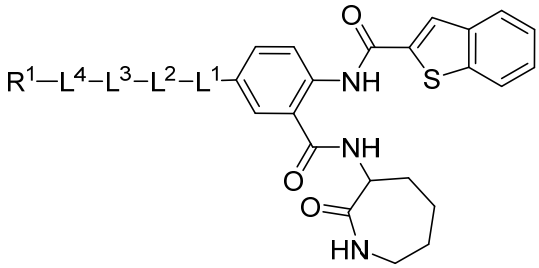
$R^1$ is an oligonucleotide, a protecting group, a small molecule, a protein, an antibody, or a peptide.

10. The compound, or a stereoisomer, tautomer, prodrug, or salt thereof, of claim 9, wherein the compound comprises the structure of Formula (IV-a):



Formula (IV-a), or

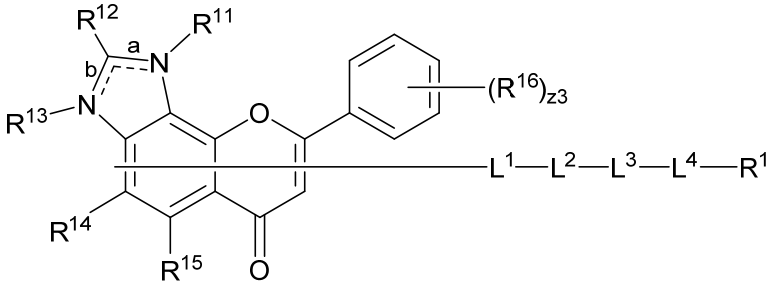
the structure of Formula (IV-b):



Formula (IV-b).

11. A compound, or a stereoisomer, tautomer, prodrug, or salt thereof,

comprising the structure of Formula (VII):



Formula (VII),

wherein:

each of $L^1$, $L^2$, $L^3$, and $L^4$ is independently a linker, bond, or absent, wherein at least one of $L^1$, $L^2$, $L^3$, and $L^4$ comprises a linker or a bond;

$R^1$ is an oligonucleotide, a protecting group, a small molecule, a protein, an antibody, or a peptide;

$R^{11}$ and $R^{13}$ are each independently absent, hydrogen, or optionally substituted alkyl;

$R^{12}$, $R^{14}$, and $R^{15}$ are each independently hydrogen, optionally substituted alkyl, optionally substituted heteroalkyl, optionally substituted cycloalkyl, optionally substituted heterocycloalkyl, optionally substituted aryl, or optionally substituted heteroaryl;

$R^{16}$ is hydrogen, halogen, –CN, $–N_3$, $–SO_{n16}R^{1A}$, $–SO_{v16}NR^{16B}R^{16C}$, $–NHNR^{16B}R^{16C}$, $–ONR^{16B}R^{16C}$, $–NHC(O)NHNR^{16B}R^{16C}$, $–NHC(O)NR^{16B}R^{16C}$, $–N(O)_{m16}$, $–NR^{16B}R^{16C}$, $–C(O)R^{16D}$, $–C(O)OR^{16D}$, $–C(O)NR^{16B}R^{16C}$, $–OR^{16A}$, $-NR^{16B}SO_2R^{16A}$, $-NR^{16B}C(O)R^{16D}$; $-NR^{16B}C(O)OR^{16D}$, $–NR^{16B}OR^{16D}$, optionally substituted alkyl, optionally substituted heteroalkyl, optionally substituted cycloalkyl, optionally substituted heterocycloalkyl, optionally substituted aryl, or optionally substituted heteroaryl;

$\overset{a}{\equiv}$ and $\overset{b}{\equiv}$ are each independently a single bond or a double bond, wherein if $\overset{a}{\equiv}$ is a single bond, then $\overset{b}{\equiv}$ is a double bond and $R^{13}$ is absent; and further wherein if $\overset{b}{\equiv}$ is a single bond, then $\overset{a}{\equiv}$ is a double bond and $R^{11}$ is absent;

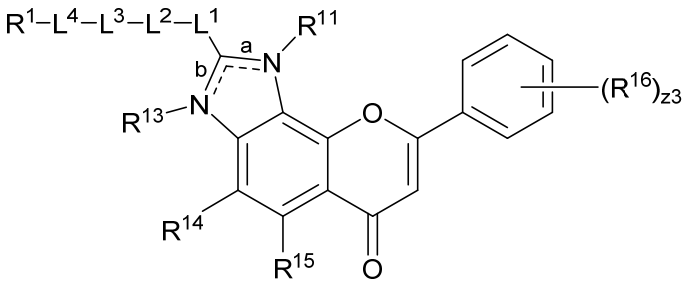
$R^{16A}$, $R^{16B}$, $R^{16C}$, $R^{16D}$ are each independently hydrogen, halogen, $–CF_3$, $–CCl_3$, $–CBr_3$, $–CI_3$, –COOH, $–CONH_2$, substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, or substituted or unsubstituted heteroaryl; $R^{16B}$ and $R^{16C}$ substituents bonded to the same nitrogen atom may optionally be joined to form a substituted or unsubstituted heterocycloalkyl or substituted or unsubstituted heteroaryl;

z3 is 0, 1, 2, 3, 4, or 5;

n16 is 0, 1, 2, 3, or 4; and

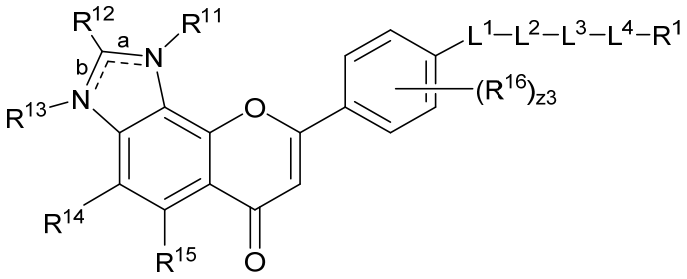
v16 and m16 are each independently 1 or 2.

12. The compound, or a stereoisomer, tautomer, prodrug, or salt thereof, of claim 11, wherein the compound comprises the structure of Formula (VII-c):



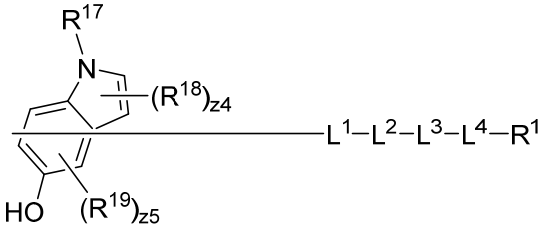
(VII-c), or

the structure of Formula (VII-d):



(VII-d).

13. A compound, or a stereoisomer, tautomer, prodrug, or salt thereof, comprising the structure of Formula (VIII):



Formula (VIII),

wherein:

each of $L^1$, $L^2$, $L^3$, and $L^4$ is independently a linker, bond, or absent, wherein at least one of $L^1$, $L^2$, $L^3$, and $L^4$ comprises a linker or a bond;

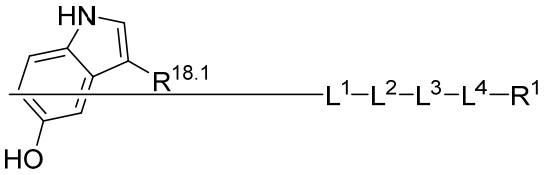
$R^1$ is an oligonucleotide, a protecting group, a small molecule, a protein, an antibody, or a peptide;

$R^{17}$, $R^{18}$, and $R^{19}$ are each independently hydrogen, optionally substituted alkyl, optionally substituted heteroalkyl, optionally substituted cycloalkyl, optionally substituted heterocycloalkyl, optionally substituted aryl, or optionally substituted heteroaryl;

z4 is 0, 1, or 2; and

z5 is 0, 1, 2, or 3.

14. The compound, or a stereoisomer, tautomer, prodrug, or salt thereof, of claim 13, wherein the compound comprises the structure of Formula (VIII-a):



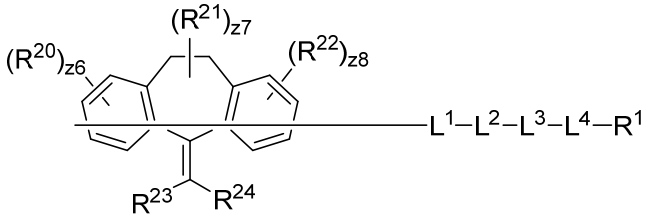

Formula (VIII-a),

wherein:

$R^{18.1}$ is hydrogen, optionally substituted alkyl or optionally substituted heteroalkyl.

15. A compound, or a stereoisomer, tautomer, prodrug, or salt thereof,

comprising the structure of Formula (IX):




Formula (IX),

wherein:

each of $L^1$, $L^2$, $L^3$, and $L^4$ is independently a linker, bond, or absent, wherein at least one of $L^1$, $L^2$, $L^3$, and $L^4$ comprises a linker or a bond;

$R^1$ is an oligonucleotide, a protecting group, a small molecule, a protein, an antibody, or a peptide;

$R^{20}$ is hydrogen, halogen, –CN, $–N_3$, $–SO_{n20}R^{1A}$, $–SO_{v20}NR^{20B}R^{20C}$, $–NHNR^{20B}R^{20C}$, $–ONR^{20B}R^{20C}$, $–NHC(O)NHNR^{20B}R^{20C}$, $–NHC(O)NR^{20B}R^{20C}$, $–N(O)_{m20}$, $–NR^{20B}R^{20C}$, $–C(O)R^{20D}$, $–C(O)OR^{20D}$, $–C(O)NR^{20B}R^{20C}$, $–OR^{20A}$, $-NR^{20B}SO_2R^{20A}$, $-NR^{20B}C(O)R^{20D}$; $-NR^{20B}C(O)OR^{20D}$, $–NR^{20B}OR^{20D}$, optionally substituted alkyl, optionally substituted heteroalkyl, optionally substituted cycloalkyl, optionally substituted heterocycloalkyl, optionally substituted aryl, or optionally substituted heteroaryl;

$R^{21}$ is hydrogen, halogen, –CN, $–N_3$, $–SO_{n21}R^{1A}$, $–SO_{v21}NR^{21B}R^{21C}$, $–NHNR^{21B}R^{21C}$, $–ONR^{21B}R^{21C}$, $–NHC(O)NHNR^{21B}R^{21C}$, $–NHC(O)NR^{21B}R^{21C}$, $–N(O)_{m21}$, $–NR^{21B}R^{21C}$, $–C(O)R^{21D}$, $–C(O)OR^{21D}$, $–C(O)NR^{21B}R^{21C}$, $–OR^{21A}$, $-NR^{21B}SO_2R^{21A}$, $-NR^{21B}C(O)R^{21D}$;

-$NR^{21B}C(O)OR^{21D}$, $–NR^{21B}OR^{21D}$, optionally substituted alkyl, optionally substituted heteroalkyl, optionally substituted cycloalkyl, optionally substituted heterocycloalkyl, optionally substituted aryl, or optionally substituted heteroaryl;

$R^{22}$ and $R^{23}$ are each independently hydrogen, optionally substituted alkyl, optionally substituted heteroalkyl, optionally substituted cycloalkyl, optionally substituted heterocycloalkyl, optionally substituted aryl, or optionally substituted heteroaryl;

$R^{24}$ is hydrogen, halogen, –CN, $–N_3$, $–SO_{n24}R^{24A}$, $–SO_{v24}NR^{24B}R^{24C}$, $–NHNR^{24B}R^{24C}$, $–ONR^{24B}R^{24C}$, $–NHC(O)NHNR^{24B}R^{24C}$, $–NHC(O)NR^{24B}R^{24C}$, $–N(O)_{m24}$, $–NR^{24B}R^{24C}$, $–C(O)R^{24D}$, $–C(O)OR^{24D}$, $–C(O)NR^{24B}R^{24C}$, $–OR^{24A}$, $-NR^{24B}SO_2R^{24A}$, $-NR^{24B}C(O)R^{24D}$;

$-NR^{24B}C(O)OR^{24D}$, $–NR^{24B}OR^{24D}$, optionally substituted alkyl, optionally substituted heteroalkyl, optionally substituted cycloalkyl, optionally substituted heterocycloalkyl, optionally substituted aryl, or optionally substituted heteroaryl;

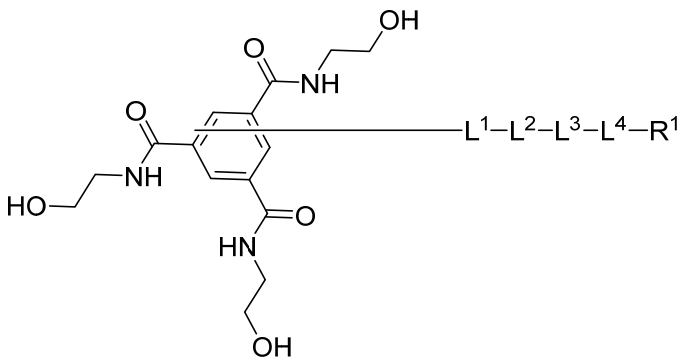
$R^{20A}$, $R^{20B}$, $R^{20C}$, $R^{20D}$, $R^{21A}$, $R^{21B}$, $R^{21C}$, $R^{21D}$, $R^{24A}$, $R^{24B}$, $R^{24C}$, and $R^{24D}$ are each independently hydrogen, halogen, $–CF_3$, $–CCl_3$, $–CBr_3$, $–CI_3$,–COOH, $–CONH_2$, substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, or substituted or unsubstituted heteroaryl; $R^{20B}$, $R^{20C}$, $R^{21B}$, $R^{21C}$, $R^{24B}$, $R^{24C}$, $R^{24B}$, and $R_2^{4C}$ substituents bonded to the same nitrogen atom may optionally be joined to form a substituted or unsubstituted heterocycloalkyl or substituted or unsubstituted heteroaryl;

n21, n22, n24, z6 and z8 are each independently 0, 1, 2, 3, or 4;

v20, v21, v24, m20, m21, and m24 are each independently 1 or 2; and

z7 is 0, 1, or 2.

16. A compound, or a stereoisomer, tautomer, prodrug, or salt thereof, comprising the structure of Formula (X):

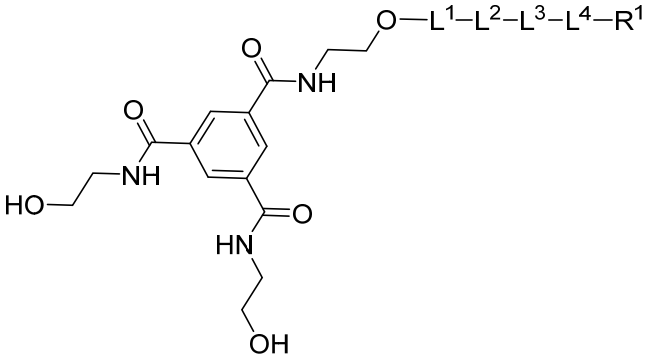


Formula (X),

wherein each of $L^1$, $L^2$, $L^3$, and $L^4$ is independently a linker, bond, or absent, wherein at least one of $L^1$, $L^2$, $L^3$, and $L^4$ comprises a linker or a bond; and

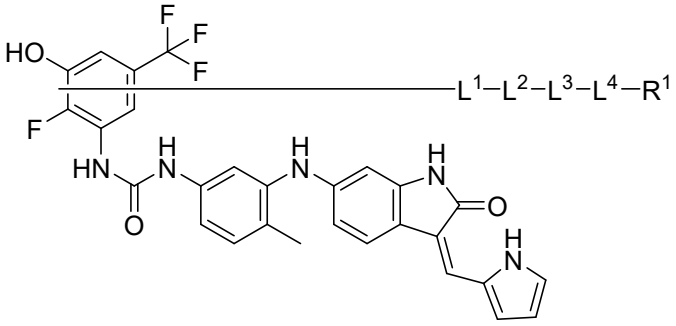
$R^1$ is an oligonucleotide, a protecting group, a small molecule, a protein, an antibody, or a peptide.

17. The compound, or a stereoisomer, tautomer, prodrug, or salt thereof, of claim 16, wherein the compound comprises the structure of Formula (X-a):




Formula (X-a).

18. A compound, or a stereoisomer, tautomer, prodrug, or salt thereof, comprising the structure of Formula (XI):

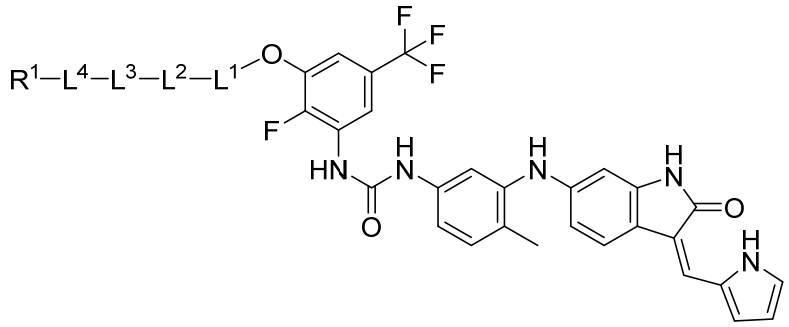



Formula (XI),

wherein each of $L^1$, $L^2$, $L^3$, and $L^4$ is independently a linker, bond, or absent, wherein at least one of $L^1$, $L^2$, $L^3$, and $L^4$ comprises a linker or a bond; and

$R^1$ is an oligonucleotide, a protecting group, a small molecule, a protein, an antibody, or a peptide.

19. The compound, or a stereoisomer, tautomer, prodrug, or salt thereof, of claim 18, wherein the compound comprises the structure of Formula (XI-a):




Formula (XI-a).

20. A composition comprising a compound, or a stereoisomer, tautomer, prodrug, or salt thereof, of any one of the preceding claims, and a pharmaceutically acceptable excipient.

21. Use of the compound of any of one of claims 1-19 or the composition of claim 20 in the preparation of a medicament for the treatment of a central nervous system (CNS) disease, disorder, or symptom thereof.

22. The use of claim 21, wherein the CNS disease, disorder, or symptom thereof is Alzheimer's disease, or a symptom thereof.