**Title:** ADAMATANE DERIVATIVES FOR THE TREATMENT OF FILOVIRUS INFECTION

**Abstract:** Compounds of structural Formula (I) were developed for the treatment of infections by filoviruses including Ebolavirus and Marburgvirus.

Declared under Rule 4.17:

— as to applicant's entitlement to claim the priority of the earlier application (Rule 4.17(b))
— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(a))

Published:

— with international search report (Art. 21(3))
— with amended claims and statement (Art. 19(1))

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AMENDED CLAIMS
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WHAT IS CLAIMED IS:

1. A method of treating infections associated with viruses of the Filoviridae enveloped virus, or any virus expressing filovirus glycoproteins to mediate cell entry comprising administration of a therapeutically effective amount of a compound of Structural Formula I

![Structural Formula I]

or a pharmaceutically acceptable salt, and a pharmaceutically acceptable carrier, diluent, or vehicle thereof, wherein:

- $X$ is C-A-D, and $Y$ is a bond or $CR^4R^5$; or
- $X$ is $CR^5$ and $Y$ is $CR^4$-A-D;
- $A$ is $-C(R^8R^8)^-$;
- $D$ is selected from the group consisting of

![Chemical Structures]

AMENDED SHEET (ARTICLE 19)
$R^1$ is selected from (C3 to C10) cycloalkyi, (Cs to C10) cycloalkenyl, (C2 to C9) cycloheteroalkyi, (C6 to C10) aryloxy, aryl, and (C2 to C9) heteroaryl, wherein each of the said (C3 to C10) cycloalkyi, (Cs to C10) cycloalkenyl, (C2 to C9) cycloheteroalkyi, (C6 to C10) aryloxy, (C3 to C10) cycloalkyi, (C2 to C9) cycloalkenyl, (C2 to C9) heteroaryl is optionally substituted with at least one R$^{13}$ group;

$R^2$ is selected from hydrogen, halogen, OH, nitro, CFs, -NR$^{11a}$R$^{11b}$, (Ci to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy, cyano, (C3 to C10) cycloalkyi, (Cst to C10) cycloalkenyl, (C2 to C9) cycloalkyi, (C2 to C9) cycloalkenyl, (C2 to C9) heteroaryl, (C2 to C9) cycloalkenyl, (C2 to C9) cycloalkenyl, (C2 to C9) heteroaryl, (C2 to C9) cycloalkenyl, (C2 to C9) cycloalkenyl, (C2 to C9) heteroaryl is optionally substituted with at least one R$^{13}$ group;

$R^3$ is selected from hydrogen, halogen, OH, nitro, CFs, -NR$^{11a}$R$^{11b}$, (Ci to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy, cyano, (C3 to C10) cycloalkyi, (C3 to C10) cycloalkenyl, (C2 to C9) cycloalkyi, (C2 to C9) cycloalkenyl, (C2 to C9) heteroaryl, (C2 to C9) cycloalkenyl, (C2 to C9) cycloalkenyl, (C2 to C9) heteroaryl is optionally substituted with at least one R$^{13}$ group;

$R^4$ is selected from hydrogen, halogen, OH, nitro, CFs, -NR$^{11a}$R$^{11b}$, (Ci to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy, cyano, (C3 to C10) cycloalkyi, (C3 to C10) cycloalkenyl, (C2 to C9) cycloalkyi, (C2 to C9) cycloalkenyl, (C2 to C9) heteroaryl, (C2 to C9) cycloalkenyl, (C2 to C9) cycloalkenyl, (C2 to C9) heteroaryl is optionally substituted with at least one R$^{13}$ group;
each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkynyl, (C1 to C10) alkoxy, aryloxy, (C3 to C10) cycloalkyly, (C3 to C10) cycloalkenyl, (C2 to C9) cycloalkenyl, (C6 to C10) aryl, and (C2 to C9) heteroaryl is optionally substituted with at least one R13 group;

R5 is selected from hydrogen, halogen, OH, nitro, CF3, -NR11aR11b, (C1 to C10) alkyl, (C1 to C10) alkenyly, (C1 to C10) alkoxy, aryloxy, (C3 to C10) cycloalkyly, (C3 to C10) cycloalkenyl, (C2 to C9) cycloalkenyl, (C6 to C10) aryl, and (C2 to C9) heteroaryl, wherein

- each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, aryloxy, cyano, (C3 to C10) cycloalkyly, (C3 to C10) cycloalkenyl, (C2 to C9) cycloalkenyl, (C6 to C10) aryl, and (C2 to C9) heteroaryl is optionally substituted with at least one R13 group;

- each of the R7a and R7b is independently selected from hydrogen, halogen, OH, nitro, CF3, -NR11aR11b, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, aryloxy, (C3 to C10) cycloalkenyl, (C3 to C10) cycloalkenyl, (C6 to C10) aryl, (C2 to C9) cycloalkenyl, (C2 to C9) cycloalkenyl, (C6 to C10) aryl, and (C2 to C9) heteroaryl, wherein

- each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, aryloxy, cyano, (C3 to C10) cycloalkyly, (C3 to C10) cycloalkenyl, (C6 to C10) aryl, and (C2 to C9) heteroaryl is optionally substituted with at least one R13 group;

- each of the R7a and R7b may be taken together with the nitrogen atom to which they are attached to form a (C2 to C10) cycloalkenyl ring, wherein

- said (C2 to C10) membered cycloalkenyl ring has 1 to 3 ring heteroatoms selected from the group consisting of N, O, and S, and wherein

- the said (C2 to C10) membered cycloalkenyl ring is optionally substituted with at least one R13 group;

- each R8 is independently selected from hydrogen, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, aryloxy, (C3 to C10) cycloalkyly, (C3 to C10) cycloalkenyl, (C6 to C10) aryl, (C2 to C9) cycloalkenyl, (C6 to C10) aryl, (C2 to C9) heteroaryl, (C6 to C10) arylene, and (C2 to C9) heteroarylene, wherein
each of the said (C₁ to C₁₀) alkyl, (Ci to C₁₀) alkenyl, (Ci to C₁₀) alkynyl, (Ci to C₁₀) alkoxy, aryloxy, (C₃ to C₁₀) cycloalkyl, (Cs to C₁₀) cycloalkenyl, (C₂ to C₉) cycloalkyne, (C₆ to C₁₅) aryloxy, (C₆ to C₁₅) heteroaryl, (C₆ to C₁₅) aryl, and (C₂ to C₉) heteroarylene is optionally substituted with at least one R¹ group;

each of the R²a, R²b, and R²c is independently selected from hydrogen, halogen, OH, nitro, CF₃, -NR¹⁺R¹⁺b, -C(0)N(R¹)mR, -C(0)NR¹⁺R¹⁺b, -S(0)mR, -S(0)mNR¹⁺R¹⁺b, -NR¹⁺S(0)mR, -O(0)mR, -O(0)mNR¹⁺R¹⁺b, -NR¹⁺O(0)mR, -NR¹⁺S(0)O(0)mR, and -NR¹⁺C(0)(0)mR, wherein

each of the said (C₁ to C₁₀) alkyl, (Ci to C₁₀) alkenyl, (Ci to C₁₀) alkynyl, (Ci to C₁₀) alkoxy, aryloxy, (C₃ to C₁₀) cycloalkyl, (Cs to C₁₀) cycloalkenyl, (C₂ to C₉) cycloalkyne, (C₆ to C₁₅) aryloxy, (C₆ to C₁₅) heteroaryl, (C₆ to C₁₅) aryl, and (C₂ to C₉) heteroarylene is optionally substituted with at least one R² group;

each of the R¹a and R¹b is independently selected from hydrogen, (C₁ to C₁₀) alkyl, (Ci to C₁₀) alkenyl, (C₁ to C₁₀) alkynyl, (C₁ to C₁₀) alkoxy, aryloxy, (C₃ to C₁₀) cycloalkyl, (Cs to C₁₀) cycloalkenyl, (C₂ to C₉) cycloalkyne, (C₆ to C₁₅) aryloxy, (C₆ to C₁₅) heteroaryl, (C₆ to C₁₅) aryl, and (C₂ to C₉) heteroarylene, wherein

each of the said (C₁ to C₁₀) alkyl, (Ci to C₁₀) alkenyl, (Ci to C₁₀) alkynyl, (Ci to C₁₀) alkoxy, aryloxy, (C₃ to C₁₀) cycloalkyl, (Cs to C₁₀) cycloalkenyl, (C₂ to C₉) cycloalkyne, (C₆ to C₁₅) aryloxy, (C₆ to C₁₅) heteroaryl, (C₆ to C₁₅) aryl, and (C₂ to C₉) heteroarylene is optionally substituted with at least one R³ group;
or R¹⁺a and R¹⁺b may be taken together with the nitrogen atom to which they are attached to form a (C₂ to C₁₀) cycloheteroarylene ring, wherein

said (C₂ to C₁₀) cycloheteroarylene ring has 1 to 3 ring heteroatoms selected from the group consisting of N, O, and S, and wherein

the said (C₂ to C₁₀) cycloheteroarylene ring is optionally substituted with at least one R³ group;
each of the R² is independently selected from hydrogen, (C₁ to C₁₀) alkyl, (Ci to C₁₀) alkenyl, (Ci to C₁₀) alkynyl, (C₃ to C₁₀) cycloalkyl, (Cs to C₁₀) cycloalkenyl, (C₂ to C₉) cycloalkyne, (C₆ to C₁₅) aryloxy, (C₆ to C₁₅) heteroaryl, (C₆ to C₁₅) aryl, and (C₂ to C₉) heteroarylene, wherein

each of the said (C₁ to C₁₀) alkyl, (Ci to C₁₀) alkenyl, (Ci to C₁₀) alkynyl, (C₃ to C₁₀) cycloalkyl, (Cs to C₁₀) cycloalkenyl, (C₂ to C₉) cycloalkyne, (C₆ to C₁₅) aryloxy, (C₆ to C₁₅) heteroaryl, (C₆ to C₁₅) aryl, and (C₂ to C₉) heteroarylene is optionally substituted with at least one R³ group;
Cio) cycloalkyi, (Cs t o C10) cycloalkenyl, (C6 t o C10) aryl, (C2 t o C9) heteroaryl, (C8 t o C10) arylene, (C2 t o C9) heteroarylene, (C3 t o C10) cycloalkyi, (C2 t o C10) cycloalkene, (C2 t o C10) cycloalkenylene, (C2 t o C10) heteroarylene, (C2 t o C10) cycloalkene, (C2 t o C10) cycloalkylene, -C(0)R 15, -C(0)NR 14aR 14b, -S(0)mR 15, -S(0)mNR 14aR 14b, -NR 14aS(0)mR 15, -\((\text{CH}_2)_n\text{C}(0)\text{OR}\) 15, -(CH\text{\_2})\text{C}(0)NR(\text{R} 14aR 14b), -(CH\text{\_2})\text{nN}(R 14aR 14b), -\text{OC}(0)R 15, -\text{O}(\text{CH}_2)_n\text{O}-, -\text{NR} 14a\text{C}(0)\text{R} 15, -\text{NR} 14a\text{C}(0)\text{N}(\text{R} 14aR 14b), wherein each of the said (C1 t o C10) alkyl, (Ci t o C10) alkenyl, (Ci t o C10) alkylnyl, (Ci t o C10) alkoxy, aryloxy, (C3 t o C10) cycloalkyi, (Cs t o C10) cycloalkenyl, (C2 t o C10) cycloalkene, (C2 t o C10) cycloalkylene, (C2 t o C10) cycloalkenylene, (C2 t o C10) heteroarylene, (C3 t o C10) cycloalkyi, (C3 t o C10) cycloalkenyl, (C2 t o C9) heteroaryl, (C8 t o C10) arylene, and (C2 t o C9) heteroarylene is optionally substituted with at least one 
\(\text{R}^{16}\) group; each of the \(\text{R}^{14a}\) and \(\text{R}^{14b}\) is independently selected from hydrogen, (C1 t o C10) alkyl, (Ci t o C10) alkenyl, (Ci t o C10) alkylnyl, (Ci t o C10) alkoxy, aryloxy, (C3 t o C10) cycloalkyi, (Cs t o C10) cycloalkenyl, (C2 t o C10) cycloalkene, (C2 t o C10) cycloalkylene, (C2 t o C10) cycloalkenylene, (C2 t o C9) heteroaryl, (C8 t o C10) arylene, and (C2 t o C9) heteroarylene, wherein each of the said (C1 t o C10) alkyl, (Ci t o C10) alkenyl, (Ci t o C10) alkylnyl, (Ci t o C10) alkoxy, aryloxy, (C3 t o C10) cycloalkyi, (Cs t o C10) cycloalkenyl, (C2 t o C10) cycloalkene, (C2 t o C10) cycloalkylene, (C2 t o C9) heteroaryl, (C8 t o C10) arylene, and (C2 t o C9) heteroarylene is optionally substituted with at least one 
\(\text{R}^{16}\) group; or \(\text{R}^{14a}\) and \(\text{R}^{14b}\) may be taken together with the nitrogen atom to which they are attached to form a (C2 t o C10) cycloalkenyl ring, wherein said (C2 t o C10) cycloalkenyl ring has 1 to 3 ring heteroatoms selected from the group consisting of N, O, and S, and wherein the said (C2 t o C10) cycloalkenyl ring is optionally substituted with at least one 
\(\text{R}^{15}\) group; each \(\text{R}^{15}\) is independently selected from hydrogen, (C1 t o C10) alkyl, (Ci t o C10) alkenyl, (Ci t o C10) alkylnyl, (Ci t o C10) alkoxy, aryloxy, (C3 t o C10) cycloalkyi, (Cs t o C10) cycloalkenyl, (C2 t o C10) cycloalkene, (C2 t o C10) cycloalkylene, (C2 t o C9) heteroaryl, (C8 t o C10) arylene, and (C2 t o C9) heteroarylene, wherein each of the said (C1 t o C10) alkyl, (Ci t o C10) alkenyl, (Ci t o C10) alkylnyl, (Ci t o C10) alkoxy, aryloxy, (C3 t o C10) cycloalkyi, (Cs t o C10) cycloalkenyl, (C2 t o C10) cycloalkene, (C2 t o C9) heteroaryl, (C8 t o C10) arylene, and (C2 t o C9) heteroarylene is optionally substituted with at least one 
\(\text{R}^{16}\) group; each \(\text{R}^{16}\) is independently selected from hydrogen, halogen, OH, nitro, CF3, -\text{NR} 17a\text{R}^{17b}, oxo, (Ci t o C10) alkyl, (Ci t o C10) alkenyl, (Ci t o C10) alkylnyl, (Ci t o C10) alkoxy, aryloxy, cyano, (C3 t o C10) cycloalkyi, (Cs t o C10) cycloalkenyl, (C2 t o C10) cycloalkene, (C6 t o C10) aryl, (C2 t o C9) heteroaryl, (C8 t o C10) arylene, (C2 t o C9) heteroarylene, (C3 t o C10) cycloalkylene, (C2 t o C10) cycloalkenylene, -\text{C}(0)\text{R} 18, -\text{C}(0)\text{NR} 17a\text{R}^{17b}, -\text{S}(0)m\text{R} 18, -\text{S}(0)m\text{NR} 17a\text{R}^{17b}, -\text{NR} 17a\text{S}(0)m\text{R} 18, -(\text{CH}_2)_n\text{C}(0)\text{OR} 18, -(\text{CH}_2)_n\text{C}(0)\text{NR}(\text{R} 17a\text{R}^{17b}), -(\text{CH}_2)_n\text{nN}(\text{R} 17a\text{R}^{17b}), -\text{OC}(0)\text{R} 18, -\text{NR} 17a\text{C}(0)\text{R} 18, and -\text{NR} 17a\text{C}(0)\text{N}(\text{R} 17a\text{R}^{17b}), wherein each of the said (C1 t o C10) alkyl, (Ci t o C10) alkenyl, (Ci t o C10) alkylnyl, (Ci t o C10) alkoxy, aryloxy, (C3 t o C10) cycloalkyi, (Cs t o C10) cycloalkenyl, (C2 t o C10) cycloalkene, (C2 t o C9) heteroaryl, (C8 t o C10) arylene, and (C2 t o C10) cycloalkenylene is optionally substituted with at least one 
\(\text{R}^{19}\) group;
each of the R^{17a} and R^{17b} is independently selected from hydrogen, (C_{1} to C_{10}) alkyl, (Ci to Cio) alkenyl, (Ci to Cio) alkynyl, (Ci to Cio) alkoxy, (C_{3} to C_{10}) cycloalkyi, (Cs to Cio) cycloalkenyl, (C_{2} to C_{10}) cycloalkenyl, (C_{2} to C_{10}) cycloalkoxy, (C_{9} to C_{10}) aryloxy, (C_{9} to C_{10}) cycloaryl, (C_{2} to C_{9}) heteroaryl, (C_{9} to C_{10}) aryl, and (C_{2} to C_{9}) heteroaraylene, wherein

5 each of the said (C_{1} to C_{10}) alkyl, (Ci to Cio) alkenyl, (Ci to Cio) alkynyl, (Ci to Cio) alkoxy, aryloxy, (C_{3} to C_{10}) cycloalkyi, (Cs to Cio) cycloalkenyl, (C_{2} to C_{10}) cycloalkenyl, (C_{9} to C_{10}) aryl, (C_{2} to C_{9}) heteroaryl, (C_{9} to C_{10}) arylene, and (C_{2} to C_{9}) heteroaraylene is optionally substituted with at least one R^{18} group,
or R^{17a} and R^{17b} may be taken together with the nitrogen atom to which they are attached to form a (C_{2} to C_{10}) cycloalkyi ring, wherein

10 said (C_{2} to C_{10}) cycloalkyi ring has 1 to 3 ring heteroatoms selected from the group consisting of N, O, and S, and wherein

the said (C_{2} to C_{10}) cycloalkyi ring is optionally substituted with at least one R^{18} group;
each R^{18} is independently selected from hydrogen, halogen, OH, nitro, CF3, (Ci to Cio) alkyl, (Ci to Cio) alkenyl, (Ci to Cio) alkynyl, (Ci to Cio) alkoxy, (C_{3} to C_{10}) cycloalkyi, (Cs to Cio) cycloalkenyl, (C_{2} to C_{10}) cycloalkenyl, (C_{9} to C_{10}) aryl, (C_{2} to C_{9}) heteroaryl, (C_{9} to C_{10}) arylene, (C_{2} to C_{9}) heteroaraylene, (C_{3} to C_{10}) cycloalkylene, (C_{2} to C_{9}) heteroarylene, and (C_{2} to C_{9}) heteroarylene is optionally substituted with at least one R^{18} group;
each R^{19} is independently selected from hydrogen, halogen, OH, nitro, CF3, -NR^{20a}R^{20b}, oxo, (Ci to Cio) alkyl, (Ci to Cio) alkenyl, (Ci to Cio) alkynyl, (Ci to Cio) alkoxy, aryloxy, cyano, (C_{3} to C_{10}) cycloalkyi, (Cs to Cio) cycloalkenyl, (C_{2} to C_{10}) cycloalkenyl, (C_{9} to C_{10}) aryl, (C_{2} to C_{9}) heteroaryl, (C_{9} to C_{10}) arylene, (C_{2} to C_{9}) heteroaraylene, (C_{3} to C_{10}) cycloalkylene, (C_{2} to C_{9}) heteroarylene, and optionally substituted with at least one R^{22} group;
each of the said (C_{1} to C_{10}) alkyl, (Ci to Cio) alkenyl, (Ci to Cio) alkynyl, (Ci to Cio) alkoxy, aryloxy, (C_{3} to C_{10}) cycloalkyi, (Cs to Cio) cycloalkenyl, (C_{2} to C_{10}) cycloalkenyl, (C_{9} to C_{10}) aryl, (C_{2} to C_{9}) heteroaryl, (C_{9} to C_{10}) arylene, (C_{2} to C_{9}) heteroaraylene, (C_{3} to C_{10}) cycloalkylene, and (C_{2} to C_{9}) heteroarylene is optionally substituted with at least one R^{22} group;
each of the R^{20a} and R^{20b} is independently selected from hydrogen, (C_{1} to C_{10}) alkyl, (Ci to Cio) alkenyl, (Ci to Cio) alkynyl, (Ci to Cio) alkoxy, aryloxy, (C_{3} to C_{10}) cycloalkyi, (Cs to Cio) cycloalkenyl, (C_{2} to C_{10}) cycloalkenyl, (C_{9} to C_{10}) aryl, and (C_{2} to C_{9}) heteroaryl, wherein

35 each of the said (C_{1} to C_{10}) alkyl, (Ci to Cio) alkenyl, (Ci to Cio) alkynyl, (Ci to Cio) alkoxy, aryloxy, (C_{3} to C_{10}) cycloalkyi, (Cs to Cio) cycloalkenyl, (C_{2} to C_{10}) cycloalkenyl, (C_{9} to C_{10}) aryl, and (C_{2} to C_{9}) heteroaryl is optionally substituted with at least one R^{22} group;
or R^{20a} and R^{20b} may be taken together with the nitrogen atom to which they are attached to form a (C_{2} to C_{10}) cycloalkyi ring, wherein
said (C<sub>2</sub> to C<sub>10</sub>) cycloheteroalkyi ring has 1 to 3 ring heteroatoms selected from the group consisting of N, O, and S, and wherein
the said (C<sub>2</sub> to C<sub>10</sub>) cycloheteroalkyi ring is optionally substituted with at least one R<sup>22</sup> group;
each R<sup>21</sup> is independently selected from hydrogen, halogen, OH, nitro, CF<sub>3</sub>, (C<sub>i</sub> to C<sub>10</sub>) alkyl,
(C<sub>i</sub> to C<sub>10</sub>) alkenyl, (C<sub>i</sub> to C<sub>10</sub>) alkynyl, (C<sub>i</sub> to C<sub>10</sub>) alkoxy, aryloxy, cyano, (C<sub>3</sub> to C<sub>10</sub>) cycloalkenyl, (C<sub>2</sub> to C<sub>10</sub>) cycloalkynyl, (C<sub>6</sub> to C<sub>10</sub>) aryl, and (C<sub>2</sub> to C<sub>9</sub>) heteroaryl;
each R<sup>22</sup> is independently selected from hydrogen, halogen, OH, nitro, CF<sub>3</sub>, -NR<sup>23a</sup>R<sup>23b</sup>, oxo, (C<sub>i</sub> to C<sub>10</sub>) alkyl, (C<sub>i</sub> to C<sub>10</sub>) alkenyl, (C<sub>i</sub> to C<sub>10</sub>) alkynyl, (C<sub>i</sub> to C<sub>10</sub>) alkoxy, aryloxy, cyano, (C<sub>3</sub> to C<sub>10</sub>) cycloalkenyl, (C<sub>2</sub> to C<sub>10</sub>) cycloalkynyl, (C<sub>6</sub> to C<sub>10</sub>) aryl, (C<sub>2</sub> to C<sub>9</sub>) heteroaryl, (C<sub>8</sub> to C<sub>10</sub>) arylene, (C<sub>2</sub> to C<sub>9</sub>) heteroarylene, (C<sub>3</sub> to C<sub>10</sub>) cycloalkylene, (C<sub>2</sub> to C<sub>10</sub>) cycloalkylenylene, -(C<sub>0</sub>)R<sup>24</sup>-S(0)mR<sup>24</sup>, -S(0)mNR<sup>23a</sup>R<sup>23b</sup>, -NR<sup>23a</sup>S(0)mR<sup>24</sup>, -(CH<sub>2</sub>)<sub>n</sub>C(0)OR<sup>24</sup>, -(CH<sub>2</sub>)<sub>n</sub>C(0)N(R<sup>23a</sup>R<sup>23b</sup>), -OC(0)R<sup>24</sup>, -NR<sup>23a</sup>C(0)R<sup>24</sup>, and -NR<sup>23a</sup>C(0)N(R<sup>23a</sup>R<sup>23b</sup>), wherein
each of the said (C<sub>1</sub> to C<sub>10</sub>) alkyl, (C<sub>1</sub> to C<sub>10</sub>) alkenyl, (C<sub>1</sub> to C<sub>10</sub>) alkynyl, (C<sub>1</sub> to C<sub>10</sub>) alkoxy, aryloxy, (C<sub>3</sub> to C<sub>10</sub>) cycloalkenyl, (C<sub>2</sub> to C<sub>10</sub>) cycloalkynyl, (C<sub>6</sub> to C<sub>10</sub>) aryl, (C<sub>2</sub> to C<sub>9</sub>) heteroaryl, (C<sub>8</sub> to C<sub>10</sub>) arylene, (C<sub>2</sub> to C<sub>9</sub>) heteroarylene, (C<sub>3</sub> to C<sub>10</sub>) cycloalkylene, and (C<sub>2</sub> to C<sub>10</sub>) cycloalkylenylene is optionally substituted with at least one R<sup>23</sup> group;
each of the R<sup>23a</sup> and R<sup>23b</sup> is independently selected from hydrogen, (C<sub>1</sub> to C<sub>10</sub>) alkyl, (C<sub>1</sub> to C<sub>10</sub>) alkenyl, (C<sub>1</sub> to C<sub>10</sub>) alkynyl, (C<sub>1</sub> to C<sub>10</sub>) alkoxy, aryloxy, cyano, (C<sub>3</sub> to C<sub>10</sub>) cycloalkenyl, (C<sub>2</sub> to C<sub>10</sub>) cycloalkynyl, (C<sub>6</sub> to C<sub>10</sub>) aryl, (C<sub>2</sub> to C<sub>9</sub>) heteroaryl;
each R<sup>24</sup> is independently selected from hydrogen, halogen, OH, nitro, CF<sub>3</sub>, (C<sub>i</sub> to C<sub>10</sub>) alkyl, (C<sub>i</sub> to C<sub>10</sub>) alkenyl, (C<sub>i</sub> to C<sub>10</sub>) alkynyl, (C<sub>i</sub> to C<sub>10</sub>) alkoxy, aryloxy, cyano, (C<sub>3</sub> to C<sub>10</sub>) cycloalkenyl, (C<sub>2</sub> to C<sub>10</sub>) cycloalkynyl, (C<sub>6</sub> to C<sub>10</sub>) aryl, (C<sub>2</sub> to C<sub>9</sub>) heteroaryl;
each R<sup>25</sup> is independently selected from hydrogen, halogen, OH, nitro, CF<sub>3</sub>, -NR<sup>26a</sup>R<sup>26b</sup>, oxo, (C<sub>i</sub> to C<sub>10</sub>) alkyl, (C<sub>i</sub> to C<sub>10</sub>) alkenyl, (C<sub>i</sub> to C<sub>10</sub>) alkynyl, (C<sub>i</sub> to C<sub>10</sub>) alkoxy, aryloxy, cyano, (C<sub>3</sub> to C<sub>10</sub>) cycloalkenyl, (C<sub>2</sub> to C<sub>10</sub>) cycloalkynyl, (C<sub>6</sub> to C<sub>10</sub>) aryl, (C<sub>2</sub> to C<sub>9</sub>) heteroaryl, (C<sub>8</sub> to C<sub>10</sub>) arylene, (C<sub>2</sub> to C<sub>9</sub>) heteroarylene, (C<sub>3</sub> to C<sub>10</sub>) cycloalkylene, (C<sub>2</sub> to C<sub>10</sub>) cycloalkylenylene, -(C<sub>0</sub>)R<sup>27</sup>-S(0)mR<sup>27</sup>, -(C<sub>0</sub>)N(R<sup>26a</sup>R<sup>26b</sup>), -(C<sub>0</sub>)N(R<sup>26a</sup>R<sup>26b</sup>)-S(0)mR<sup>27</sup>, -(C<sub>0</sub>)S(0)mR<sup>27</sup>, -(C<sub>0</sub>)N(R<sup>26a</sup>R<sup>26b</sup>)-S(0)mR<sup>27</sup>, -(C<sub>0</sub>)N(R<sup>26a</sup>R<sup>26b</sup>)-S(0)mR<sup>27</sup>, -(C<sub>0</sub>)S(0)mR<sup>27</sup>, -NR<sup>26a</sup>C(0)R<sup>27</sup>, and -NR<sup>26a</sup>C(0)N(R<sup>26a</sup>R<sup>26b</sup>), wherein
each of the said (C<sub>1</sub> to C<sub>10</sub>) alkyl, (C<sub>1</sub> to C<sub>10</sub>) alkenyl, (C<sub>1</sub> to C<sub>10</sub>) alkynyl, (C<sub>1</sub> to C<sub>10</sub>) alkoxy, aryloxy, (C<sub>3</sub> to C<sub>10</sub>) cycloalkenyl, (C<sub>2</sub> to C<sub>10</sub>) cycloalkynyl, (C<sub>6</sub> to C<sub>10</sub>) aryl, (C<sub>2</sub> to C<sub>9</sub>) heteroaryl, (C<sub>8</sub> to C<sub>10</sub>) arylene, (C<sub>2</sub> to C<sub>9</sub>) heteroarylene, (C<sub>3</sub> to C<sub>10</sub>) cycloalkylene, and (C<sub>2</sub> to C<sub>10</sub>) cycloalkylenylene is optionally substituted with at least one R<sup>27</sup> group;
each of the R<sup>26a</sup> and R<sup>26b</sup> is independently selected from hydrogen, (C<sub>1</sub> to C<sub>10</sub>) alkyl, (C<sub>1</sub> to C<sub>10</sub>) alkenyl, (C<sub>1</sub> to C<sub>10</sub>) alkynyl, (C<sub>1</sub> to C<sub>10</sub>) alkoxy, aryloxy, (C<sub>3</sub> to C<sub>10</sub>) cycloalkenyl, (C<sub>2</sub> to C<sub>10</sub>) cycloalkynyl, (C<sub>6</sub> to C<sub>10</sub>) aryl, and (C<sub>2</sub> to C<sub>9</sub>) heteroaryl;
or R<sup>26a</sup> and R<sup>26b</sup> may be taken together with the nitrogen atom to which they are attached to form a (C<sub>2</sub> to C<sub>10</sub>) cycloalkylenylene ring, wherein
said (C₆ to C₁₀) cycloheteroalkyl ring has 1 to 3 ring heteroatoms selected from the group consisting of N, O, and S;

each R² is independently selected from hydrogen, halogen, OH, nitro, CF₃, (C₁ to C₁₀) alkyl, (C₁ to C₁₀) alkenyl, (C₁ to C₁₀) alkynyl, (C₁ to C₁₀) alkoxy, aryloxy, cyano, (C₃ to C₁₀) cycloalkenyl, (C₂ to C₁₀) cycloalkenyl, (Ce to C₁₀) aryl, (C₂ to C₉) heteroaryl;

h is 1 or 2;
i is 2, 3, 4, 5, or 6;
j is 0, 1, 2, 3, 4, or 5;
k is 1, 2, 3, 4, or 5;
m is 0, 1 or 2;
n is 0, 1, 2, 3, or 4;
Z is selected from the group consisting of -O-, -S-, -S(O)-, and -S(0)-

with the proviso that

when R¹, R², or R³ is alkyl or hydrogen, X is C-C(R⁶aR⁶b)⁻D, Y is CH₂, and D is

then NR⁷aR⁷b cannot be an optionally substituted piperazine or 1,4-diazepane,

and with the proviso that

when X is CR², Y is CR⁴⁻D, D is -NR⁷aR⁷b, and R⁷a and R⁷b are taken together with the nitrogen atom to which they are attached to form a (C₂ to C₁₀) cycloheteroalkyl ring, the said (C₂ to C₁₀) membered cycloheteroalkyl ring cannot be selected from the group consisting of

2. The method of claim 1, wherein the infection is associated with filovirus selected from the group consisting of Ebolavirus and Marburgvirus.

3. The method of claim 2, where the filovirus is Ebolavirus.

4. The method of claim 3, including administering a therapeutic amount of a therapeutic agent selected from the group consisting of Ribavirin, viral RNA-dependent-RNA-polymerase inhibitors, Favipiravir, Triazavirin, GS-5734, small interfering RNAs (siRNAs) and microRNAs, vaccines, and immunomodulators.

5. The method of claim 4, including the inhibition of Ebolavirus glycoprotein.

6. The method of claim 1, wherein

NR⁷aR⁷b is selected from the group consisting of
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The method of claim 6, wherein:

X is C-A-D and Y is C R 4 R 5 .

The method of claim 7, wherein:

A is -C(R a R b) R c ;

D is \( \text{NR}^7\text{R}^7\) .

The method of claim 8, wherein:

R 1 is selected from (C6 to C10) aryl and (C2 to C9) heteroaryl, wherein each of the said (C6 to C10) aryl and (C2 to C9) heteroaryl is optionally substituted with at least one R 13 group;

R 2 is selected from hydrogen, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkynyl, (C3 to C10) cycloalkyi, (Csto C10) cycloalkenyl, (C1 to C10) alkoxy, -(CH 2)nC(0)N(R 13aR 13b) , and -(C=O)R 12 , wherein each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkynyl, (C3 to C10) cycloalkyi, (Csto C10) cycloalkenyl, and (C1 to C10) alkoxy is optionally substituted with at least one R 13 group;

R 3 is selected from hydrogen, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkynyl, (C3 to C10) cycloalkyi, and (Csto C10) cycloalkenyl, wherein each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkynyl, (C3 to C10) cycloalkyi, and (Csto C10) cycloalkenyl, wherein
(C5 to C10) cycloalkenyl is optionally substituted with at least one R13 group;
R4 is hydrogen;
R5 is hydrogen.
10. The method of claim 9, wherein:
R3 is hydrogen.
11. The method of claim 7, wherein:
A is \(-C(R^8 R^6)\);
\[
\begin{array}{c}
\text{O} \\
\text{R}^{8a} \\
\text{R}^{8b} \\
\text{N} \\
\text{R}^7a \\
\text{R}^{7b} \\
\text{D} \\
\end{array}
\]
D is .
12. The method of claim 11, wherein:
R1 is selected from (C6 to C10) aryl and (C2 to C9) heteroaryl, wherein
each of the said (C6 to C10) aryl and (C2 to C9) heteroaryl is optionally substituted with at least
one R13 group;
R2 is selected from hydrogen, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkynyl, (C3 to
C10) cycloalkyi, (C3 to C10) cycloalkenyl, (C1 to C10) alkoxy, -(CH2)nC(O)N(RaRb), and -C(O)R12.
15. The method of claim 7, wherein:
R1 is hydrogen;
R4 is hydrogen;
R5 is hydrogen.
13. The method of claim 12, wherein:
A is \(-C(R^8 R^6)\);
\[
\begin{array}{c}
\text{O} \\
\text{R}^{8a} \\
\text{R}^{8b} \\
\text{N} \\
\text{R}^7a \\
\text{R}^{7b} \\
\text{D} \\
\end{array}
\]
D is .
14. The method of claim 13, wherein:
R1 is selected from (C6 to C10) aryl and (C2 to C9) heteroaryl, wherein
each of the said (C6 to C10) aryl and (C2 to C9) heteroaryl is optionally substituted with at least
one R13 group;
R2 is selected from hydrogen, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkynyl, (C3 to
C10) cycloalkyi, (C3 to C10) cycloalkenyl, (C1 to C10) alkoxy, -(CH2)nC(O)N(RaRb), and -C(O)R12.
30. The method of claim 7, wherein:
R1 is hydrogen;
R4 is hydrogen;
R5 is hydrogen.
15. The method of claim 7, wherein:
A is \(-C(R^a R^b)\);

D is selected from the group consisting of

\[
\begin{align*}
\text{O} & \text{O} \\
\text{N} & \text{S} \\
\text{S} & \text{N} \\
\text{R}^8 & \text{R}^7a\text{R}^7b \\
\text{R}^8 & \text{N}\text{R}^7a\text{R}^7b
\end{align*}
\]

\[\text{and}
\begin{align*}
\text{O} & \text{N} \\
\text{S} & \text{N}
\end{align*}\]

16. The method of claim 15, wherein:

- \(R^1\) is selected from \((C_6\text{ to } C_{10})\) aryl and \((C_2\text{ to } C_9)\) heteroaryl, wherein each of the said \((C_6\text{ to } C_{10})\) aryl and \((C_2\text{ to } C_9)\) heteroaryl is optionally substituted with at least one \(R^{13}\) group;
- \(R^2\) is selected from hydrogen, \((C_1\text{ to } C_{10})\) alkyl, \((C_1\text{ to } C_{10})\) alkenyl, \((C_2\text{ to } C_{10})\) alkynyl, \((C_3\text{ to } C_{10})\) cycloalkyl, \((C_7\text{ to } C_{10})\) cycloalkenyl, \((C_8\text{ to } C_{10})\) alkoxy, \(-(CH_2)_nC(0)N(R^a R^b)\), and \(-C(0)R^1\),

wherein each of the said \((C_1\text{ to } C_{10})\) alkyl, \((C_1\text{ to } C_{10})\) alkenyl, \((C_1\text{ to } C_{10})\) alkynyl, \((C_3\text{ to } C_{10})\) cycloalkyl, \((C_7\text{ to } C_{10})\) cycloalkenyl, and \((C_8\text{ to } C_{10})\) alkoxy is optionally substituted with at least one \(R^{13}\) group;

- \(R^3\) is hydrogen;
- \(R^4\) is hydrogen;
- \(R^5\) is hydrogen.

17. The method of claim 1, wherein:

- \(A\) is \(-C(R^a R^b)\);

D is \[\begin{align*}
\text{O} & \text{N} \\
\text{S} & \text{N}
\end{align*}\],

wherein \(R^{10a}\) is selected from the group consisting of

\[
\begin{align*}
\text{N} & \text{R}^8a\text{R}^{11a} \\
\text{N} & \text{R}^8b\text{R}^{11b} \\
\text{N} & \text{R}^8c\text{R}^{11c} \\
\text{N} & \text{R}^8d\text{R}^{11d}
\end{align*}
\]
R is selected from (C6 to C10) aryl and (C2 to C9) heteroaryl, wherein each of the said (C6 to C10) aryl and (C2 to C9) heteroaryl is optionally substituted with at least one R\textsuperscript{13} group;

R\textsuperscript{2} is selected from hydrogen, (C\textsubscript{1} to C\textsubscript{10}) alkyl, (C\textsubscript{1} to C\textsubscript{10}) alkenyl, (C\textsubscript{1} to C\textsubscript{10}) alkynyl, (C\textsubscript{3} to C\textsubscript{10}) cycloalkyi, (C\textsubscript{3} to C\textsubscript{10}) cycloalkenyl, (C\textsubscript{1} to C\textsubscript{10}) alkoxy, -(CH\textsubscript{2})\textsubscript{n}C(\textsubscript{0})N(R\textsubscript{\textalpha}R\textsubscript{\textbeta}), and -C(\textsubscript{0})R\textsubscript{12}, wherein each of the said (C\textsubscript{1} to C\textsubscript{10}) alkyl, (C\textsubscript{1} to C\textsubscript{10}) alkenyl, (C\textsubscript{1} to C\textsubscript{10}) alkynyl, (C\textsubscript{3} to C\textsubscript{10}) cycloalkyi, (C\textsubscript{3} to C\textsubscript{10}) cycloalkenyl, and (C\textsubscript{1} to C\textsubscript{10}) alkoxy is optionally substituted with at least one R\textsuperscript{13} group;

R\textsuperscript{3} is hydrogen;

R\textsuperscript{4} is hydrogen;

R\textsuperscript{5} is hydrogen.

18. The method of claim 6, wherein:

X is C-A-D and Y is a bond.

19. The method of claim 18, wherein:

A is -C(R\textsuperscript{6}R\textsuperscript{6b})\textsubscript{r};

D is selected from the group consisting of

\[ \text{R}\textsuperscript{7a}R\textsuperscript{7b} \]

R\textsuperscript{1} is selected from (C6 to C10) aryl and (C2 to C9) heteroaryl, wherein each of the said (C6 to C10) aryl and (C2 to C9) heteroaryl is optionally substituted with at least one R\textsuperscript{13} group.

R\textsuperscript{2} is selected from hydrogen, (C\textsubscript{1} to C\textsubscript{10}) alkyl, (C\textsubscript{1} to C\textsubscript{10}) alkenyl, (C\textsubscript{1} to C\textsubscript{10}) alkynyl, (C\textsubscript{3} to C\textsubscript{10}) cycloalkyi, (C\textsubscript{3} to C\textsubscript{10}) cycloalkenyl, (C\textsubscript{1} to C\textsubscript{10}) alkoxy, -(CH\textsubscript{2})\textsubscript{n}C(\textsubscript{0})N(R\textsubscript{11a}R\textsubscript{11b}), and -C(\textsubscript{0})R\textsubscript{12}, wherein each of the said (C\textsubscript{1} to C\textsubscript{10}) alkyl, (C\textsubscript{1} to C\textsubscript{10}) alkenyl, (C\textsubscript{1} to C\textsubscript{10}) alkynyl, (C\textsubscript{3} to C\textsubscript{10}) cycloalkyi, (C\textsubscript{3} to C\textsubscript{10}) cycloalkenyl, and (C\textsubscript{1} to C\textsubscript{10}) alkoxy is optionally substituted with at least one R\textsuperscript{13} group;

R\textsuperscript{3} is hydrogen.

20. The method of claim 6, wherein:

X is CR\textsuperscript{5} and Y is CR\textsuperscript{4}-A-D.
21. The method of claim 20, wherein:

A is -C(R^6-R^6)^2; 
D is selected from the group consisting of 

R^1 is selected from (C6 to C10) aryl and (C2 to C9) heteroaryl, wherein 
each of the said (C6 to C10) aryl and (C2 to C9) heteroaryl is optionally substituted with at least 
one R^1 group; 

R^2 is selected from hydrogen, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkynyl, (C3 to 
C10) cycloalkyl, (C6 to C10) cycloalkenyl, (C6 to C10) cycloalkinyl, (C6 to C10) alkoxy, -(CH_2)_nC(0)N(R^1-R^1n), and -C(0)R^12, 
wherein 
each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkynyl, (C3 to C10) cycloalkyl, 
(C6 to C10) cycloalkenyl, and (C6 to C10) alkoxy is optionally substituted with at least one R^1 group; 

R^3 is hydrogen; 

R^4 is hydrogen; 

R^5 is hydrogen.

22. The method of claim 20, wherein:

A is -C(R^6-R^6)^2; 
D is selected from the group consisting of 

R^1 is selected from hydrogen, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkynyl, (C3 to 
C10) cycloalkyl, (C6 to C10) cycloalkenyl, (C6 to C10) cycloalkinyl, (C6 to C10) alkoxy, -(CH_2)_nC(0)N(R^1-R^1n), and -C(0)R^12, 
wherein 
each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkynyl, (C3 to C10) cycloalkyl, 
(C6 to C10) cycloalkenyl, and (C6 to C10) alkoxy is optionally substituted with at least one R^1 group; 

R^2 is selected from hydrogen, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkynyl, (C3 to 
C10) cycloalkyl, (C6 to C10) cycloalkenyl, (C6 to C10) cycloalkinyl, (C6 to C10) alkoxy, -(CH_2)_nC(0)N(R^1-R^1n), and -C(0)R^12, 
wherein 
each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkynyl, (C3 to C10) cycloalkyl, 
(C6 to C10) cycloalkenyl, and (C6 to C10) alkoxy is optionally substituted with at least one R^1 group; 

R^3 is selected from hydrogen, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkynyl, (C3 to 
C10) cycloalkyl, (C6 to C10) cycloalkenyl, (C6 to C10) cycloalkinyl, 
wherein 
each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkynyl, (C3 to C10) cycloalkyl, 
(C6 to C10) cycloalkenyl is optionally substituted with at least one R^1 group; 

R^4 is selected from (C6 to C10) aryl and (C2 to C9) heteroaryl, wherein 
each of the said (C6 to C10) aryl and (C2 to C9) heteroaryl is optionally substituted with at least 
one R^1 group;
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R^5 is hydrogen.

23. The method of claim 22, wherein:
   R^1 is hydrogen;
   R^2 is hydrogen;
   R^3 is hydrogen.

24. A method of treating infections associated with viruses of the Filoviridae enveloped virus, or any virus expressing filovirus glycoproteins to mediate cell entry comprising administration of a therapeutically effective amount of a compound of Structural Formula I

   \[
   \text{I}
   \]

   \[
   \begin{align*}
   R^8 & \rightarrow \text{R}^{10b}, & \frac{1}{2} \text{R}^{10b}, & \text{X}, & \text{Y}, & \text{Z} \rightarrow \text{R}^{10b}, \text{and} & \text{R}^3
   \end{align*}
   \]

   X is C-A-D, and Y is a bond or CR^4R^5;
   A is (C6 to C10) arylene or (C2 to C9) heteroarylene, wherein
   each of the said (C6 to C10) arylene or (C2 to C9) heteroarylene is optionally substituted with at least one R^6 group;
   D is selected from the group consisting of
   cyclo-alkenyl, (C to C10) cycloalkenyl, (C to C10) alkynyl, (C to C10) alkoxy, cyano, (C3 to C10) cycloalkyl, (C to C10) alkynyl, (C to C9) cycloalkenyl, (C to C10) aryl, (C2 to C9) heteroarylene, -
   C(0)R^{12}, -C(0)NR^{11a}R^{11b}, -S(0)mR^{12}, -S(0)mNR^{11a}R^{11b}, -NR^{11a}S(0)mR^{12}, -(CH_2)jN(C(0))OR^{12}, -
   (CH_2)nCO)N(R^{11a}R^{11b}, -(CH_2)nN(R^{11a}R^{11b}), -OC(0)R^{12}, -NR^{11a}C(0)R^{12}, and -
   NR^{11a}C(0)N(R^{11a}R^{11b}), wherein
   \]

   each of the said (C to C10) alkyl, (C to C10) alkenyl, (C to C10) alkynyl, (C to C10) alkoxy, (C3 to C10) cycloalkyl, (C2 to C9) cycloalkenyl, (C to C10) aryl, and (C2 to C9) heteroarylene is optionally substituted with at least one R^13 group;
   R^2 is selected from hydrogen, halogen, OH, nitro, CFs, -NR^{11a}R^{11b}, (C to C10) alkyl, (C to C10) alkenyl, (C to C10) alkynyl, (C to C10) alkoxy, cyano, (C3 to C10) cycloalkyl, (C to C10) cycloalkenyl, (C to C10) aryl, (C2 to C9) heteroarylene, -
   C(0)R^{12}, -C(0)NR^{11a}R^{11b}, -S(0)mR^{12}, -S(0)mNR^{11a}R^{11b}, -NR^{11a}S(0)mR^{12}, -(CH_2)jN(C(0))OR^{12}, -
   (CH_2)nCO)N(R^{11a}R^{11b}, -(CH_2)nN(R^{11a}R^{11b}), -OC(0)R^{12}, -NR^{11a}C(0)R^{12}, and -
   NR^{11a}C(0)N(R^{11a}R^{11b}), wherein
each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkynyl, (C3 to C10) cycloalkyl, (C3 to C10) cycloalkenyl, (C2 to C9 cycloalkenyl, (Ceto C10) ary1, and (C2 to C9) heteroaryl is optionally substituted with at least one R3 group;

R3 is selected from hydrogen, halogen, OH, nitro, CF3, -NR11aR11b, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, (C3 to C10) cycloalkyl, (C1 to C10) alkynyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, (C3 to C10) cycloalkenyl, (Ceto C10) ary1, and (C2 to C9) heteroaryl is optionally substituted with at least one R13 group;

R4 is selected from hydrogen, halogen, OH, nitro, CF3, -NR11aR11b, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, (C3 to C10) cycloalkenyl, (Ceto C10) ary1, and (C2 to C9) heteroaryl is optionally substituted with at least one R13 group;

R5 is selected from hydrogen, halogen, OH, nitro, CF3, -NR11aR11b, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, (C3 to C10) cycloalkenyl, (Ceto C10) ary1, and (C2 to C9) heteroaryl is optionally substituted with at least one R13 group;

and (C2 to C9) heteroaryl is optionally substituted with at least one R13 group;

and each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, (C3 to C10) cycloalkenyl, (Ceto C10) ary1, and (C2 to C9) heteroaryl is optionally substituted with at least one R13 group;
each of the $R^a$ and $R^b$ is independently selected from hydrogen, (C$_1$ to C$_{10}$) alkyl, (Cl to C$_{10}$) alkenyl, (Cl to C$_{10}$) alkynyl, (Cl to C$_{10}$) alkoxy, aryloxy, NR$_{1}^a$-R$_{1}^{1b}$, (Cs to C$_{10}$) cycloalky1, (Cs to C$_{10}$) cycloalkenyl, (C$_2$ to C$_9$) cycloalkenyl, (C$_6$ to C$_{10}$) aryl, (C$_2$ to C$_9$) heteroaryl, (C$_6$ to C$_{10}$) arylene, and (C$_2$ to C$_9$) heteroarylene, wherein

each of the said (C$_1$ to C$_{10}$) alkyl, (Cl to Cl$_{10}$) alkenyl, (Cl to Cl$_{10}$) alkynyl, (Cl to Cl$_{10}$) alkoxy, aryloxy, NR$_{3}$-R$_{1}^{1b}$, (Cs to C$_{10}$) cycloalkenyl, (C$_2$ to C$_9$) cycloalkenyl, (C$_6$ to C$_{10}$) aryl, (C$_2$ to C$_9$) heteroaryl, (C$_6$ to C$_{10}$) arylene, and (C$_2$ to C$_9$) heteroarylene is optionally substituted with at least one R$_{13}$ group,

or $R^a$ and $R^b$ may be taken together with the nitrogen atom to which they are attached to form a (C$_2$ to C$_{10}$) cycloalkenyl ring, wherein

the said (C$_2$ to C$_{10}$) membered cycloalkenyl ring has 1 to 3 ring heteroatoms selected from the group consisting of N, O, and S, and wherein

the said (C$_2$ to C$_{10}$) membered cycloalkenyl ring is optionally substituted with at least one R$_{13}$ group;

each $R^8$ is independently selected from hydrogen, (C$_1$ to C$_{10}$) alkyl, (Cl to Cl$_{10}$) alkenyl, (Cl to Cl$_{10}$) alkoxy, aryloxy, (C$_3$ to C$_{10}$) cycloalky1, (Cs to C$_{10}$) cycloalkenyl, (C$_6$ to C$_{10}$) aryl, (C$_2$ to C$_9$) heteroaryl, (C$_6$ to C$_{10}$) arylene, and (C$_2$ to C$_9$) heteroarylene, wherein

each of the said (C$_1$ to C$_{10}$) alkyl, (Cl to Cl$_{10}$) alkenyl, (Cl to Cl$_{10}$) alkoxy, aryloxy, (C$_3$ to C$_{10}$) cycloalky1, (Cs to C$_{10}$) cycloalkenyl, (C$_6$ to C$_{10}$) aryl, (C$_2$ to C$_9$) heteroaryl, (C$_6$ to C$_{10}$) arylene, and (C$_2$ to C$_9$) heteroarylene is optionally substituted with at least one R$_{13}$ group;

each of the $R_{1}^{1a}$, $R_{1}^{1b}$, and $R_{1}^{1c}$ is independently selected from hydrogen, halogen, OH, nitro, CFs, -NR$_{1}^{1a}$-R$_{1}^{1b}$, (Cl to Cl$_{10}$) alkyl, (Cl to Cl$_{10}$) alkenyl, (Cl to Cl$_{10}$) alkoxy, aryloxy, cyano, (C$_3$ to C$_{10}$) cycloalky1, (C$_6$ to C$_{10}$) cycloalkenyl, (C$_2$ to C$_9$) cycloalkenyl, (C$_6$ to C$_{10}$) aryl, (C$_2$ to C$_9$) heteroaryl, -C(0)R$_{12}$, -C(0)NR$_{1}^{1a}$-R$_{1}^{1b}$, -S(0)mR$_{12}$, -S(0)mNR$_{1}^{1a}$-R$_{1}^{1b}$, -NR$_{1}^{1a}$-S(0)mR$_{12}$, -(CH$_2$)$_n$C(0)OR$_{12}$, -(CH$_2$)$_n$N(R$_{1}^{1a}$-R$_{1}^{1b}$), -(CH$_2$)$_n$N(R$_{1}^{1a}$-R$_{1}^{1b}$), -(CH$_2$)$_n$C(0)R$_{12}$, -NR$_{1}^{1a}$-C(0)R$_{12}$, and -NR$_{1}^{1a}$-C(0)N(R$_{1}^{1a}$-R$_{1}^{1b}$), wherein

each of the said (Cl to C$_{10}$) alkyl, (Cl to C$_{10}$) alkenyl, (Cl to C$_{10}$) alkoxy, aryloxy, (C$_3$ to C$_{10}$) cycloalky1, (Cs to C$_{10}$) cycloalkenyl, (C$_2$ to C$_9$) cycloalkenyl, (C$_6$ to C$_{10}$) aryl, and (C$_2$ to C$_9$) heteroaryl is optionally substituted with at least one R$_{13}$ group;

each of the $R_{1}^{1a}$ and $R_{1}^{1b}$ is independently selected from hydrogen, (C$_1$ to C$_{10}$) alkyl, (Cl to Cl$_{10}$) alkenyl, (Cl to Cl$_{10}$) alkoxy, (C$_3$ to C$_{10}$) cycloalky1, (Cs to C$_{10}$) cycloalkenyl, (C$_2$ to C$_9$) cycloalkenyl, (C$_6$ to C$_{10}$) aryl, (C$_2$ to C$_9$) heteroaryl, wherein

each of the said (C$_1$ to C$_{10}$) alkyl, (Cl to C$_{10}$) alkenyl, (Cl to C$_{10}$) alkoxy, aryloxy, (C$_3$ to C$_{10}$) cycloalky1, (Cs to C$_{10}$) cycloalkenyl, (C$_2$ to C$_9$) cycloalkenyl, (C$_6$ to C$_{10}$) aryl, (C$_2$ to C$_9$) heteroaryl is optionally substituted with at least one R$_{13}$ group;

each of the $R_{1}^{1a}$ and $R_{1}^{1b}$ is independently selected from hydrogen, (C$_1$ to C$_{10}$) alkyl, (Cl to C$_{10}$) alkenyl, (Cl to C$_{10}$) alkoxy, aryloxy, (C$_3$ to C$_{10}$) cycloalky1, (Cs to C$_{10}$) cycloalkenyl, (C$_2$ to C$_9$) cycloalkenyl, (C$_6$ to C$_{10}$) aryl, (C$_2$ to C$_9$) heteroaryl is optionally substituted with at least one R$_{13}$ group;
cycloalkenyl, (C₂ to C₉) cycloheteroalkyi, (C₆ to C₁₂) aryl, (C₂ to C₉) heteroaryl, (C₆ to C₁₀) arylene,
and (C₂ to C₉) heteroarylene, wherein

each of the said (C₁ to C₁₀) alkyl, (C₁ to C₁₀) alkenyl, (C₁ to C₁₀) alkynyl, (C₁ to C₁₀) alkoxy,
aryloxy, (C₃ to C₁₀) cycloalkyi, (C₆ to C₁₀) cycloalkenyl, (C₂ to C₉) cycloheteroalkyi, (C₆ to C₁₀) aryl,
(C₂ to C₉) heteroaryl, (C₆ to C₁₀) arylene, and (C₂ to C₉) heteroarylene is optionally substituted
with at least one R₁₃ group,
or R¹¹a and R¹¹b may be taken together with the nitrogen atom to which they are attached to
form a (C₂ to C₁₀) cycloheteroalkyi ring, wherein

said (C₂ to C₁₀) cycloheteroalkyi ring has 1 to 3 ring heteroatoms selected from the group
consisting of N, O, and S, and wherein

the said (C₂ to C₁₀) cycloheteroalkyi ring is optionally substituted with at least one R₁₃ group;
each of the R₁₃ is independently selected from hydrogen, (C₁ to C₁₀) alkyl, (C₁ to C₁₀) alkenyl,
(C₁ to C₁₀) alkynyl, (C₃ to C₁₀) cycloalkyi, (C₆ to C₁₀) cycloalkenyl, (C₂ to C₉) cycloheteroalkyi, (C₆
to C₁₀) aryl, and (C₂ to C₉) heteroaryl, wherein

each of the said (C₁ to C₁₀) alkyl, (C₁ to C₁₀) alkenyl, (C₁ to C₁₀) alkynyl, (C₃ to C₁₀) cycloalkyi,
(C₆ to C₁₀) cycloalkenyl, (C₂ to C₉) cycloalkyi, (C₂ to C₉) aryl, and (C₂ to C₉) heteroaryl is
optionally substituted with at least one R₁₃ group;
each R₁₃ is independently selected from hydrogen, halogen, OH, nitro, CF₃, -NR¹⁴aR¹⁴b, oxo,
(C₁ to C₁₀) alkyl, (C₁ to C₁₀) alkenyl, (C₁ to C₁₀) alkynyl, (C₁ to C₁₀) alkoxy, aryl, aryl, cyano, (C₃
to C₁₀) cycloalkenyl, (C₆ to C₁₀) cycloalkenyl, (C₂ to C₉) cycloalkyi, (C₆ to C₁₀) aryl, (C₂ to C₉)
heteroaryl, (C₆ to C₁₀) arylene, (C₂ to C₉) heteroarylene, (C₃ to C₁₀) cycloalkyi, (C₂ to C₁₀)
cycloalkenyl, -C(0)R¹⁵, -C(0)NR¹⁴aR¹⁴b, -S(0)mR¹⁵, -S(0)mNR¹⁴aR¹⁴b, -NR¹⁴aS(0)mR¹⁵, -(CH₂)nC(0)OR¹⁵,
-(CH₂)nC(0)N(R¹⁴aR¹⁴b), -(CH₂)nN(R¹⁴aR¹⁴b), -OC(0)R¹⁵, -(CH₂)nO⁻, -NR¹⁴aC(0)R¹⁵, and
-NR¹⁴aC(0)N(R¹⁴aR¹⁴b), wherein

each of the said (C₁ to C₁₀) alkyl, (C₁ to C₁₀) alkenyl, (C₁ to C₁₀) alkynyl, (C₁ to C₁₀) alkoxy,
aryloxy, (C₃ to C₁₀) cycloalkyi, (C₆ to C₁₀) cycloalkenyl, (C₂ to C₉) cycloalkyi, (C₆ to C₁₀)
aryl, (C₂ to C₉) heteroaryl, (C₆ to C₁₀) arylene, (C₂ to C₉) heteroarylene, (C₃ to C₁₀) cycloalkyi,
cycloalkenyl, and (C₂ to C₉) cycloalkyi is optionally substituted with at least one R¹₆ group;
each of the R¹⁴a and R¹⁴b is independently selected from hydrogen, (C₁ to C₁₀) alkyl, (C₁
to C₁₀) alkenyl, (C₁ to C₁₀) alkynyl, (C₁ to C₁₀) alkoxy, aryl, aryl, cyano, (C₃ to C₁₀) cycloalkyi,
(C₆ to C₁₀) cycloalkenyl, (C₂ to C₉) cycloalkyi, (C₆ to C₁₀) aryl, (C₂ to C₉) heteroaryl, (C₆ to C₁₀)
arylene, and (C₂ to C₉) heteroarylene, wherein

said (C₂ to C₁₀) cycloalkyi ring has 1 to 3 ring heteroatoms selected from the group
consisting of N, O, and S, and wherein
the said (C₂ to C₁₀) cyclohexoalkyl ring is optionally substituted with at least one R⁶ group;
each R⁶ is independently selected from hydrogen, (C₁ to C₉) alkyl, (Cl to C₁₀) alkenyl, (Cl to C₁₀) alkynyl, (C₂ to C₁₀) cycloalkyl, (C₆ to C₁₀) cycloalkenyl, (C₂ to C₁₀) cycloalkynyl, (C₈ to C₁₀) cycloalkylene, and (C₂ to C₉) heteroaryl, wherein
each of the said (C₁ to C₁₀) alkyl, (Cl to C₁₀) alkenyl, (Cl to C₁₀) alkynyl, (C₂ to C₁₀) cycloalkyl, (C₆ to C₁₀) cycloalkenyl, (C₂ to C₁₀) cycloalkynyl, (C₈ to C₁₀) cycloalkylene, and (C₂ to C₉) heteroaryl is optionally substituted with at least one R⁶ group;
each R⁶ is independently selected from hydrogen, halogen, OH, nitro, CF₃, -NR¹²R¹³b, oxo, (Cl to C₁₀) alkyl, (Cl to C₁₀) alkenyl, (Cl to C₁₀) alkynyl, (Cl to C₁₀) cycloalkyl, (Cl to C₁₀) cycloalkenyl, (Cl to C₁₀) cycloalkylene, (C₂ to C₁₀) cycloalkynyl, (C₂ to C₁₀) heteroaryl, (C₆ to C₁₀) arylene, (C₂ to C₉) heteroarylene, (C₃ to C₁₀) cycloalkylene, and (C₂ to C₁₀) cyclohexoalkylene is optionally substituted with at least one R¹⁹ group;
each of the R¹⁷a and R¹⁷b is independently selected from hydrogen, (Cl to C₁₀) alkyl, (Cl to C₁₀) alkenyl, (Cl to C₁₀) alkynyl, (Cl to C₁₀) cycloalkyl, (Cl to C₁₀) cycloalkenyl, (C₂ to C₁₀) cycloalkylene, (C₂ to C₁₀) heteroaryl, and (C₂ to C₉) heteroarylene, wherein
each of the said (C₁ to C₁₀) alkyl, (Cl to C₁₀) alkenyl, (Cl to C₁₀) alkynyl, (Cl to C₁₀) cycloalkyl, (Cl to C₁₀) cycloalkenyl, (C₂ to C₁₀) cycloalkylene, (C₂ to C₁₀) heteroaryl, (C₆ to C₁₀) arylene, and (C₂ to C₉) heteroarylene is optionally substituted with at least one R¹⁹ group,
or R¹⁷a and R¹⁷b may be taken together with the nitrogen atom to which they are attached to form a (C₂ to C₁₀) cyclohexoalkyi ring, wherein
said (C₂ to C₁₀) cyclohexoalkyi ring has 1 to 3 ring heteroatoms selected from the group consisting of N, O, and S, and wherein
the said (C₂ to C₁₀) cyclohexoalkyi ring is optionally substituted with at least one R¹⁹ group;
each R¹⁹ is independently selected from hydrogen, halogen, OH, nitro, CF₃, (Cl to C₁₀) alkyl, (Cl to C₁₀) alkenyl, (Cl to C₁₀) alkynyl, (Cl to C₁₀) cycloalkyl, (Cl to C₁₀) cycloalkenyl, (C₂ to C₁₀) cyclohexoalkyi, (C₂ to C₉) heteroaryl, and (C₂ to C₉) heteroarylene, wherein
each of the said (C₁ to C₁₀) alkyl, (Cl to C₁₀) alkenyl, (Cl to C₁₀) alkynyl, (Cl to C₁₀) cycloalkyl, (Cl to C₁₀) cycloalkenyl, (C₂ to C₁₀) cyclohexoalkyi, (C₂ to C₉) heteroaryl, and (C₂ to C₉) heteroarylene is optionally substituted with at least one R¹⁹ group;
each R¹⁹ is independently selected from hydrogen, halogen, OH, nitro, CF₃, -NR²⁰aR²⁰b, oxo, (Cl to C₁₀) alkyl, (Cl to C₁₀) alkenyl, (Cl to C₁₀) alkynyl, (Cl to C₁₀) cycloalkyl, (Cl to C₁₀) cycloalkenyl, (C₂ to C₁₀) cyclohexoalkyi, (C₂ to C₉) heteroaryl, and (C₂ to C₉) heteroarylene, wherein
C10 cycloalkyi, (C2 to C10) cycloalkenyl, (C6 to C10) cycloalkylene, (C2 to C9) heteroaryl, (C9 to C10) aryl, (C2 to C9) heteroaryl, (C6 to C10) cycloalkyi, (C5 to C10) cycloalkenyl, (C2 to C10) cycloalkylene, (C2 to C9) heteroaryl, (C6 to C10) aryl, (C2 to C9) heteroaryl; consisting of each aryl, aryloxy, aryl, aryloxy,

NR20aS(O)mR21, -(CH2)nOC(O)OR 21, -(CH2)nNC(O)N(R 20aR20b), -(CH2)nN(R20aR20b), -OC(O)R 21, -NR20aC(O)R 21, and -NR20aC(O)N(R20aR20b), wherein
each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkyloxy, aryloxy, (C3 to C10) cycloalkyi, (C5 to C10) cycloalkenyl, (C2 to C10) cycloalkylene, (C2 to C9) heteroaryl, (C6 to C10) aryl, (C2 to C9) heteroaryl, and (C2 to C10) cycloalkylene is optionally substituted with at least one R22 group;
each of the R20a and R20b is independently selected from hydrogen, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkyloxy, aryloxy, (C3 to C10) cycloalkyi, (C5 to C10) cycloalkenyl, (C2 to C10) cycloalkylene, (C2 to C9) heteroaryl, and (C2 to C9) heteroaryl, wherein
each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkyloxy, aryloxy, cyano, (C3 to C10) cycloalkyi, (C5 to C10) cycloalkenyl, (C2 to C10) cycloalkylene, (C2 to C10) aryl, and (C2 to C9) heteroaryl is optionally substituted with at least one R22 group;
or R20a and R20b may be taken together with the nitrogen atom to which they are attached to form a (C2 to C10) cycloalkylene ring, wherein
the said (C2 to C10) cycloalkylene ring has 1 to 3 ring heteroatoms selected from the group consisting of N, O, and S, and wherein
each R1 is independently selected from hydrogen, halogen, OH, nitro, CF3, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkyloxy, aryloxy, cyano, (C3 to C10) cycloalkyi, (C5 to C10) cycloalkenyl, (C2 to C10) cycloalkylene, (C2 to C9) heteroaryl, (C2 to C10) aryl, and (C2 to C9) heteroaryl;
each R22 is independently selected from hydrogen, halogen, OH, nitro, CF3, -NR23aR23b, oxo, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkyloxy, aryloxy, cyano, (C3 to C10) cycloalkyi, (C5 to C10) cycloalkenyl, (C2 to C10) cycloalkylene, (C2 to C9) heteroaryl, (C2 to C10) aryl, and (C2 to C9) heteroaryl, wherein
each R23a and R23b is independently selected from hydrogen, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkyloxy, aryloxy, (C3 to C10) cycloalkyi, (C5 to C10) cycloalkenyl, (C2 to C10) cycloalkylene, (C2 to C9) heteroaryl, (C6 to C10) aryl, and (C6 to C10) heteroaryl, wherein
each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkyloxy, aryloxy, cyano, (C3 to C10) cycloalkyi, (C5 to C10) cycloalkenyl, (C2 to C10) cycloalkylene, (C2 to C9) heteroaryl, (C6 to C10) aryl, and (C6 to C10) heteroaryl is optionally substituted with at least one R25 group;
each of the R23a and R23b is independently selected from hydrogen, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkyloxy, aryloxy, cyano, (C3 to C10) cycloalkyi, (C5 to C10) cycloalkenyl, (C2 to C10) cycloalkylene, (C2 to C9) heteroaryl, (C6 to C10) aryl, and (C6 to C10) heteroaryl;
each R is independently selected from hydrogen, halogen, OH, nitro, CF3, -NR R , 0x0, (Ci to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy, aryloxy, cyano, (C3 to C10) cycloalkyi, (Cs to C10) cycloalkenyl, (C2 to C10) cycloalkylene, (Ce to C10) aryl, (C2 to C9) heteroaryl, (C8 to C10) arylene, (C2 to C9) heteroarylene, (C3 to C10) cycloalkylene, (C2 to C10) cycloalkylene, -C(0)R 27, -C(0)NR 28, -S(0)mR 27, -S(0)mNR 28, -OC(0)R 27, -NR 28,C(0)R 27, and -NR 28,C(0)N(R 28,R 28), wherein each of the said (C1 to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy, (C3 to C10) cycloalkyi, (Cs to C10) cycloalkenyl, (C2 to C10) cycloalkylene, (C8 to C10) aryl, (C2 to C9) heteroaryl, (C8 to C10) arylene, (C2 to C9) heteroarylene, (C3 to C10) cycloalkylene, and (C2 to C10) cycloalkylene is optionally substituted with at least one R27 group; each of the R28 and R28 is independently selected from hydrogen, (C1 to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy, (C3 to C10) cycloalkyi, (Cs to C10) cycloalkenyl, (C2 to C10) cycloalkylene, (C8 to C10) aryl, and (C2 to C9) heteroaryl, or R28 and R28 may be taken together with the nitrogen atom to which they are attached to form a (C2 to C10) cycloalkylene ring, wherein said (C2 to C10) cycloalkylene ring has 1 to 3 ring heteroatoms selected from the group consisting of N, O, and S; each R27 is independently selected from hydrogen, halogen, OH, nitro, CF3, (Ci to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy, aryloxy, cyano, (C3 to C10) cycloalkyi, (Cs to C10) cycloalkenyl, (C2 to C10) cycloalkylene, (Ce to C10) aryl, (C2 to C9) heteroaryl; h is 1 or 2; i is 2, 3, 4, 5, or 6; j is 0, 1, 2, 3, 4, or 5; k is 1, 2, 3, 4, or 5; m is 0, 1 or 2; n is 0, 1, 2, 3, or 4; Z is selected from the group consisting of -0-, -S-, -S(O)-, and -S(0) 2-.

The method of claim 24, wherein:

R10b is selected from the group consisting of
26. The method of claim 25, wherein:
Y is a bond.

27. The method of claim 25, wherein
Y is C\text{R}^4\text{R}^5.

28. A method of treating infections associated with viruses of the Filoviridae enveloped virus, or any virus expressing filovirus glycoproteins to mediate cell entry comprising administration of a therapeutically effective amount of a compound or a pharmaceutically acceptable salt, and a pharmaceutically acceptable carrier, diluent, or vehicle thereof, selected from the group consisting of:
29. The method of claim 28, wherein the compound is selected from the group consisting of:

\[ \text{Chemical structures here} \]

30. The method of claim 28, wherein the infection is associated with filovirus selected from the group consisting of Ebolavirus and Marburgvirus.

31. The method of claim 30, wherein the filovirus is Ebolavirus.

32. The method of claim 31, including administering a therapeutic amount of a therapeutic agent selected from the group consisting of Ribavirin, viral RNA-dependent-RNA-polymerase inhibitors, Favipiravir, Triazavirin, GS-5734, small interfering RNAs (siRNAs) and microRNAs, vaccines, and immunomodulators.
33. The method of claim 29, wherein the infection is associated with filovirus selected from the group consisting of Ebolavirus and Marburgvirus.

34. The method of claim 33, wherein the filovirus is Ebolavirus.

35. The method of claim 34, including administrating a therapeutic amount of a therapeutic agent selected from the group consisting of Ribavirin, viral RNA-dependent-RNA-polymerase inhibitors, Favipiravir, Triazavirin, GS-5734, small interfering RNAs (siRNAs) and microRNAs, vaccines, and immunomodulators.

36. A compound represented by Structural Formula I

\[
\text{I} \quad \text{or a pharmaceutically acceptable salt, and a pharmaceutically acceptable carrier, diluent, or vehicle thereof, wherein:}
\]

\[
X \text{ is } C\text-A-D, \text{ and } Y \text{ is a bond or } CR^4R^5; \text{ or}
\]

\[
X \text{ is } CR^5 \text{ and } Y \text{ is } CR^4\text-A-D;
\]

\[
A \text{ is } -C(R^6R^8)_{1-7};
\]

\[
D \text{ is selected from the group consisting of }
\]

\[
\text{wherein } NR'^aR'^b \text{ is selected from the group consisting of }
\]
and wherein \( R^a \) is selected from the group consisting of

\[
\begin{align*}
\text{(C6 to C10) Aryl} & \quad \text{N} \\
\text{(C2 to C9) Heteroaryl} & \quad \text{N}
\end{align*}
\]

and wherein \( R^{10a} \) is selected from the group consisting of
R is selected from (C₃ to C₁₀) cycloalkyl, (Cs to C₁₀) cycloalkenyl, (C₂ to C₉) cycloheteroalkyl, (C₆ to C₁₀) aryl, and (C₂ to C₉) heteroaryl, wherein each of the said (C₃ to C₁₀) cycloalkyl, (Cs to C₁₀) cycloalkenyl, (C₂ to C₉) cycloheteroalkyl, (C₆ to C₁₀) aryl, and (C₂ to C₉) heteroaryl is optionally substituted with at least one R₃ with the proviso that R¹ is not selected from the group consisting of
$R^2$ is selected from hydrogen, halogen, OH, nitro, CFs, -NR$_{11a}$S$_{11b}$, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, aryloxy, cyano, (C3 to C10) cycloalkyl, (Cs to C10) cycloalkenyl, (C2 to C9) cycloheteroalkyl, (Ceto C10) aryl, (C2 to C9) heteroaryl, -

$\mathbf{C(0)R^{12}, C(0)NR_{11a}R_{11b}, -S(0)mR_{12}, -S(0)_{j}NR_{11a}R_{11b}, -NR_{11a}S(0)_{m}R_{12}, -(CH_{j})_{m}C(0)OR_{12}, -(CH_{j})_{m}C(0)N(0)_{m}R(0)_{12}, -(CH_{j})_{m}C(0)N(0)_{m}R(0)_{12}, -(CH_{j})_{m}C(0)N(0)_{m}R(0)_{12}}$

wherein
each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, aryloxy, (C3 to C10) cycloalkyl, (Cs to C10) cycloalkenyl, (C2 to C9) cycloheteroalkyl, (Ceto C10) aryl, and (C2 to C9) heteroaryl is optionally substituted with at least one $R_{13}$ group;

$R^3$ is selected from hydrogen, halogen, OH, nitro, CFs, -NR$_{11a}$S$_{11b}$, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, aryloxy, cyano, (C3 to C10) cycloalkyl, (C2 to C9) cycloalkenyl, (Ceto C10) aryl, (C2 to C9) heteroaryl, -

$\mathbf{C(0)R^{12}, C(0)NR_{11a}R_{11b}, -S(0)mR_{12}, -S(0)_{j}NR_{11a}R_{11b}, -NR_{11a}S(0)_{m}R_{12}, -(CH_{j})_{m}C(0)OR_{12}, -(CH_{j})_{m}C(0)N(0)_{m}R(0)_{12}, -(CH_{j})_{m}C(0)N(0)_{m}R(0)_{12}}$

wherein
each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, aryloxy, (C3 to C10) cycloalkyl, (Cs to C10) cycloalkenyl, (C2 to C9) cycloheteroalkyl, (Ceto C10) aryl, and (C2 to C9) heteroaryl is optionally substituted with at least one $R_{13}$ group;

$R^4$ is selected from hydrogen, halogen, OH, nitro, CFs, -NR$_{11a}$S$_{11b}$, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, aryloxy, cyano, (C3 to C10) cycloalkyl, (C2 to C9) cycloalkenyl, (Ceto C10) aryl, (C2 to C9) heteroaryl, -

$\mathbf{C(0)R^{12}, C(0)NR_{11a}R_{11b}, -S(0)mR_{12}, -S(0)_{j}NR_{11a}R_{11b}, -NR_{11a}S(0)_{m}R_{12}, -(CH_{j})_{m}C(0)OR_{12}, -(CH_{j})_{m}C(0)N(0)_{m}R(0)_{12}, -(CH_{j})_{m}C(0)N(0)_{m}R(0)_{12}}$

wherein
each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, aryloxy, (C3 to C10) cycloalkyl, (Cs to C10) cycloalkenyl, (C2 to C9) cycloheteroalkyl, (Ceto C10) aryl, and (C2 to C9) heteroaryl is optionally substituted with at least one $R_{13}$ group;

$R^5$ is selected from hydrogen, halogen, OH, nitro, CF$_3$, -NR$_{11a}$S$_{11b}$, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, aryloxy, cyano, (C3 to C10) cycloalkyl, (C2 to C9) cycloalkenyl, (Ceto C10) aryl, (C2 to C9) heteroaryl, -

$\mathbf{C(0)R^{12}, C(0)NR_{11a}R_{11b}, -S(0)mR_{12}, -S(0)_{j}NR_{11a}R_{11b}, -NR_{11a}S(0)_{m}R_{12}, -(CH_{j})_{m}C(0)OR_{12}, -(CH_{j})_{m}C(0)N(0)_{m}R(0)_{12}, -(CH_{j})_{m}C(0)N(0)_{m}R(0)_{12}}$

wherein
each of the said (Ci to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy, aryloxy, (C3 to C10) cycloalkyli, (Cs to C10) cycloalkenyl, (C2 to C9) cycloheteroalkyli, (Ce to C10) aryl, and (C2 to C9) heteroaryl is optionally substituted with at least one R\textsuperscript{13} group;

each of the R\textsuperscript{5a} and R\textsuperscript{6b} is independently selected from hydrogen, halogen, OH, nitro, CF\textsubscript{3},
-NR\textsuperscript{11a}R\textsuperscript{11b}, (Ci to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy, aryloxy, cyano, (C\textsubscript{3} to C10) cycloalkyli, (Cs to C10) cycloalkenyl, (C2 to C9) cycloheteroalkyli, (Ce to C10) aryl, (C2 to C9) heteroaryl, -C(0)R \textsuperscript{12}, -C(0)NR \textsuperscript{11a}R\textsuperscript{11b}, -S(0)mR \textsuperscript{12}, -S(0)mNR \textsuperscript{11a}R\textsuperscript{11b}, -NR\textsuperscript{11a}S(0)mR \textsuperscript{12}, -(CH\textsubscript{2})\text{nC(0)OR} \textsuperscript{12}, -(CH\textsubscript{2})\text{nC(0)N(R} \textsuperscript{11a}R\textsuperscript{11b}), -(CH\textsubscript{2})\text{nN(R} \textsuperscript{11a}R\textsuperscript{11b}), -(CH\textsubscript{2})\text{nC(0)R} \textsuperscript{12}, -(CH\textsubscript{2})\text{nN(R} \textsuperscript{11a}R\textsuperscript{11b}), -(CH\textsubscript{2})\text{nC(0)N(R} \textsuperscript{11a}R\textsuperscript{11b}), and -NR\textsuperscript{11a}C(0)N(R \textsuperscript{11a}R\textsuperscript{11b}), wherein

each of the said (Ci to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy, aryloxy, (C3 to C10) cycloalkyli, (Cs to C10) cycloalkenyl, (C2 to C9) cycloheteroalkyli, (Ce to C10) aryl, and (C2 to C9) heteroaryl is optionally substituted with at least one R\textsuperscript{13} group;

each R\textsuperscript{8} is independently selected from hydrogen, (C\textsubscript{1} to C\textsubscript{10}) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkoxy, aryloxy, (C3 to C10) cycloalkyli, (Cs to C10) cycloalkenyl, (C2 to C9) cycloheteroalkyli, (Ce to C10) aryl, cyano, (C\textsubscript{3} to C10) cycloalkyli, (Cs to C10) cycloalkenyl, (C2 to C9) cycloheteroalkyli, (Ce to C10) aryl, (C2 to C9) heteroaryl, -(CH\textsubscript{2})\text{nC(0)OR} \textsuperscript{12}, -(CH\textsubscript{2})\text{nC(0)N(R} \textsuperscript{11a}R\textsuperscript{11b}), -(CH\textsubscript{2})\text{nN(R} \textsuperscript{11a}R\textsuperscript{11b}), -(CH\textsubscript{2})\text{nC(0)R} \textsuperscript{12}, -(CH\textsubscript{2})\text{nN(R} \textsuperscript{11a}R\textsuperscript{11b}), -(CH\textsubscript{2})\text{nC(0)N(R} \textsuperscript{11a}R\textsuperscript{11b}), and -NR\textsuperscript{11a}C(0)N(R \textsuperscript{11a}R\textsuperscript{11b}), wherein

each of the said (C\textsubscript{1} to C\textsubscript{10}) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy, aryloxy, (C3 to C10) cycloalkyli, (Cs to C10) cycloalkenyl, (C2 to C9) cycloheteroalkyli, (Ce to C10) aryl, (C2 to C9) heteroaryl, (Cs to C10) cycloalkenyl, (C6 to C\textsubscript{10}) aryl, (C2 to C\textsubscript{9}) heteroarylene, and (C2 to C\textsubscript{9}) heteroarylene is optionally substituted with at least one R\textsuperscript{13} group;

each of the R\textsuperscript{5a}, R\textsuperscript{5c}, and R\textsuperscript{6c} is independently selected from hydrogen, halogen, OH, nitro, CF\textsubscript{3}, -NR\textsuperscript{11a}R\textsuperscript{11b}, (Ci to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkoxy, aryloxy, cyano, (C\textsubscript{3} to C10) cycloalkyli, (Cs to C10) cycloalkenyl, (C2 to C9) cycloheteroalkyli, (Ce to C10) aryl, (C2 to C9) heteroaryl, -(C(0)R \textsuperscript{12}, -(C(0)NR \textsuperscript{11a}R\textsuperscript{11b}, -(S(0)mR \textsuperscript{12}, -(S(0)mNR \textsuperscript{11a}R\textsuperscript{11b}, -(NR\textsuperscript{11a}S(0)mR \textsuperscript{12}, -(CH\textsubscript{2})\text{nC(0)OR} \textsuperscript{12}, -(CH\textsubscript{2})\text{nC(0)N(R} \textsuperscript{11a}R\textsuperscript{11b}), -(CH\textsubscript{2})\text{nN(R} \textsuperscript{11a}R\textsuperscript{11b}), -(CH\textsubscript{2})\text{nC(0)R} \textsuperscript{12}, -(CH\textsubscript{2})\text{nN(R} \textsuperscript{11a}R\textsuperscript{11b}), -(CH\textsubscript{2})\text{nC(0)N(R} \textsuperscript{11a}R\textsuperscript{11b}), and -NR\textsuperscript{11a}C(0)N(R \textsuperscript{11a}R\textsuperscript{11b}), wherein

each of the said (Ci to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy, aryloxy, (C3 to C10) cycloalkyli, (Cs to C10) cycloalkenyl, (C2 to C9) cycloheteroalkyli, (Ce to C10) aryl, and (C2 to C9) heteroaryl is optionally substituted with at least one R\textsuperscript{13} group;

each of the R\textsuperscript{11a} and R\textsuperscript{11b} is independently selected from hydrogen, (C\textsubscript{1} to C\textsubscript{10}) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkoxy, aryloxy, (C3 to C10) cycloalkyli, (Cs to C10) cycloalkenyl, (C2 to C9) cycloheteroalkyli, (Ce to C10) aryl, (C2 to C9) heteroaryl, (Cs to C10) cycloalkenyl, (C6 to C\textsubscript{10}) aryl, (C2 to C\textsubscript{9}) heteroarylene, and (C2 to C\textsubscript{9}) heteroarylene is optionally substituted with at least one R\textsuperscript{13} group;

each of the said (C\textsubscript{1} to C\textsubscript{10}) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy, aryloxy, (C3 to C10) cycloalkyli, (Cs to C10) cycloalkenyl, (C2 to C\textsubscript{9}) cycloheteroalkyli, (C\textsubscript{6} to C\textsubscript{10}) aryl, (C\textsubscript{2} to C\textsubscript{9}) heteroaryl, (C\textsubscript{6} to C\textsubscript{10}) arylene, and (C\textsubscript{2} to C\textsubscript{9}) heteroarylene is optionally substituted with at least one R\textsuperscript{13} group;

or R\textsuperscript{11a} and R\textsuperscript{11b} may be taken together with the nitrogen atom to which they are attached to form a (C2 to C\textsubscript{10}) cycloheteroalkyli ring, wherein
said (C₂ to C₁₀) cycloheteroalkyi ring has 1 to 3 ring heteroatoms selected from the group consisting of N, O, and S, and wherein

the said (C₂ to C₁₀) cycloheteroalkyi ring is optionally substituted with at least one R¹₃ group;

each of the R¹₃ is independently selected from hydrogen, (C₁ to C₆) alkyl, (Ci to C₁₀) alkenyl, (Ci to C₁₀) alkynyl, (C₃ to C₁₀) cycloalkenyl, (C₆ to C₁₀) aryl, (C₆ to C₁₀) cycloalkenyl, (C₉ to C₁₀) aryl, and (C₂ to C₉) heteroaryl, wherein

each of the said (C₁ to C₁₀) alkyl, (Ci to C₁₀) alkenyl, (Ci to C₁₀) alkynyl, (C₃ to C₁₀) cycloalkenyl, (C₆ to C₁₀) aryl, (C₆ to C₁₀) cycloalkenyl, (C₉ to C₁₀) aryl, and (C₂ to C₉) heteroaryl is optionally substituted with at least one R¹₆ group;

each R¹₆ is independently selected from hydrogen, halogen, OH, nitro, CF₃, -NR¹₄aR¹₄b, oxo, (Ci to C₁₀) alkyl, (Ci to C₁₀) alkenyl, (Ci to C₁₀) alkynyl, (Ci to C₁₀) alkoxy, aryloxy, cyano, (C₃ to C₁₀) cycloalkeny, (C₆ to C₁₀) cycloalkenyl, (C₂ to C₉) cycloalkenyl, (C₆ to C₁₀) aryl, (C₂ to C₉) heteroaryl, (C₂ to C₉) arylene, (C₂ to C₉) heteroarylene, (C₃ to C₁₀) cycloalkylene, (C₂ to C₁₀) cycloalkenylenyl, -C(0)R¹₅ -C(0)NR¹₄aR¹₄b, -S(0)mR¹₅, -S(0)mNR¹₄aR¹₄b, -NR¹₄aS(0)mR¹₅, -(CH₂)nC(0)OR¹₅, -(CH₂)nC(0)N(R¹₄aR¹₄b), -(CH₂)nN(R¹₄aR¹₄b), -OC(0)R¹₅, -(O(CH₂)₈O), -
-NR¹₄aC(0)N(R¹₄aR¹₄b), wherein

each of the said (C₁ to C₁₀) alkyl, (Ci to C₁₀) alkenyl, (Ci to C₁₀) alkynyl, (Ci to C₁₀) alkoxy, aryloxy, (C₃ to C₁₀) cycloalkeny, (C₆ to C₁₀) cycloalkenyl, (C₂ to C₁₀) cycloalkenylenyl, (C₂ to C₁₀) aryl, (C₂ to C₉) heteroaryl, (C₂ to C₉) arylene, (C₂ to C₉) heteroarylene, wherein

each of the said (C₁ to C₁₀) alkyl, (Ci to C₁₀) alkenyl, (Ci to C₁₀) alkynyl, (Ci to C₁₀) alkoxy, aryloxy, (C₃ to C₁₀) cycloalkeny, (C₆ to C₁₀) cycloalkenyl, (C₂ to C₁₀) cycloalkenylenyl, (C₂ to C₉) heteroaryl, (C₂ to C₉) arylene, (C₂ to C₉) heteroarylene is optionally substituted with at least one R¹₇ group;

each of the R¹₄a and R¹₄b is independently selected from hydrogen, (C₁ to C₁₀) alkyl, (Ci to C₁₀) alkenyl, (Ci to C₁₀) alkynyl, (Ci to C₁₀) alkoxy, aryloxy, (C₃ to C₁₀) cycloalkeny, (C₆ to C₁₀) cycloalkenyl, (C₂ to C₁₀) cycloalkenylenyl, (C₂ to C₉) heteroaryl, (C₂ to C₉) arylene, (C₂ to C₉) heteroarylene, wherein

or R¹₄a and R¹₄b may be taken together with the nitrogen atom to which they are attached to form a (C₂ to C₁₀) cycloalkenylenyl ring, wherein

said (C₂ to C₁₀) cycloalkenylenyl ring has 1 to 3 ring heteroatoms selected from the group consisting of N, O, and S, and wherein

the said (C₂ to C₁₀) cycloalkenylenyl ring is optionally substituted with at least one R¹₆ group;

each R¹₆ is independently selected from hydrogen, (C₁ to C₁₀) alkyl, (Ci to C₁₀) alkenyl, (Ci to C₁₀) alkynyl, (C₃ to C₁₀) cycloalkenyl, (C₆ to C₁₀) cycloalkenylenyl, (C₂ to C₁₀) cycloalkenylenyl, (C₂ to C₉) heteroaryl, (C₂ to C₉) arylene, and (C₂ to C₉) heteroarylene, wherein

each of the said (C₁ to C₁₀) alkyl, (Ci to C₁₀) alkenyl, (Ci to C₁₀) alkynyl, (C₃ to C₁₀) cycloalkenyl, (C₆ to C₁₀) cycloalkenylenyl, (C₂ to C₁₀) cycloalkenylenyl, (C₂ to C₉) heteroaryl, (C₂ to C₉) arylene, and (C₂ to C₉) heteroarylene is optionally substituted with at least one R¹₇ group;
each R is independently selected from hydrogen, halogen, OH, nitro, CF3, -NR R , oxo,
(Ci to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (Ci to C10) aryl, (Ci to c9)
5 heteroaryl, (C6 to C10) arene, (C2 to C9) heteroarene, (C2 to C9) arylene, (C2 to C9)
cycloalkenyl, (C2 to C9) cycloalkyl, (C2 to C9) cycloalkylene, (C3 to C10) cycloalkylene,
(C2 to C10) cycloalkyl, (C2 to C10) cycloalkylene, (C2 to C10) cycloalkylene,
6 -C(0)R -C(0)NR R , -S(0)mNR R , -S(0)mNR R , -NR R S(0)mR , -(CH C0)OR , -(CH C0)OR,
-C(0)N(R R ) R , -OC(0)R , -NR C(0)R , and -NR C(0)R R , wherein
8 each of the said (C1 to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy,
(C3 to C10) cycloalkenyl, (C3 to C10) cycloalkyl, (C2 to C9) cycloalkyl,
10 heteroaryl, (C6 to C10) arene, (C2 to C9) heteroarene, (C3 to C10) cycloalkylene,
and (C2 to C10) cycloalkylene is optionally substituted with at least one R group;
each of the R and R is independently selected from hydrogen, (C1 to C10) alkyl, (Ci to C10)
15 alkenyl, (Ci to C10) alkynyl, (Ci to C10) aryl, (Ci to C10) heteroaryl, (C6 to C10) arene,
(C2 to C9) heteroarene, wherein
each of the said (C1 to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy,
20 (C3 to C10) cycloalkenyl, (C3 to C10) cycloalkyl, (C2 to C9) cycloalkyl, (C2 to C10)
cycloalkyl, (C2 to C10) cycloalkylene, (C6 to C10) arene, and (C2 to C9) heteroaryl,
25 wherein the said (C2 to C10) cycloalkylene ring has 1 to 3 ring heteroatoms selected from the group
consisting of N, O, and S, and wherein
each of the said (C1 to C10) cycloalkylene ring is optionally substituted with at least one R group;
each R is independently selected from hydrogen, halogen, OH, nitro, CF3, (Ci to C10) alkyl,
30 (Ci to C10) alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy, cyano, (C3 to C10) cycloalkeny,
(Cs to C10) cycloalkenyl, (C2 to C10) cycloalkylene, (C6 to C10) arene, and (C2 to C9) heteroaryl,
35 wherein each of the said (C1 to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (C3 to C10)
cycloalkenyl, (Cs to C10) cycloalkenyl, (C2 to C10) cycloalkyl, (C2 to C9) heteroaryl, and (C6 to C10)
aryl is optionally substituted with at least one R group;
each R is independently selected from hydrogen, halogen, OH, nitro, CF3, -NR R , oxo,
40 (Ci to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy, cyano, (C3 to C10)
cycloalkenyl, (Cs to C10) cycloalkenyl, (C2 to C10) cycloalkylene, (C6 to C10) arene, and (C2 to C9)
5 heteroaryl, (C6 to C10) arene, (C2 to C9) heteroarene, (C2 to C10) cycloalkylene,
(C2 to C10) cycloalkyl, (C2 to C10) cycloalkylene, (C2 to C10) cycloalkylene,
6 -C(0)R -C(0)NR R , -S(0)mNR R , -S(0)mNR R , -NR R S(0)mR , -(CH C0)OR , -(CH C0)OR,
-C(0)N(R R ) R , -OC(0)R , -NR C(0)R , and -NR C(0)R R , wherein
8 each of the said (C1 to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy,
(C3 to C10) cycloalkenyl, (C3 to C10) cycloalkyl, (C2 to C10) cycloalkyl, (C2 to C10) cycloalkylene,
(C6 to C10) arene, and (C2 to C9) heteroaryl,
(C2 to Cg) heteroaryl, (C6 to C10) arylene, (C2 to Cg) heteroarylene, (C3 to C10) cycloalkylene, and (C2 to C10) cyclo heteroarylene is optionally substituted with at least one R22 group;
each of the R20a and R20b is independently selected from hydrogen, (C1 to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy, (C3 to C10) cycloalky lyn, (Cs to C10) cyclo heteroalky lyn, (C2 to C10) cyclo heteroalky lyn, (C6 to C10) aryl, and (C2 to Cg) heteroaryl, wherein each of the said (C1 to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkoxy, (C3 to C10) cycloalky lyn, (Cs to C10) cyclo heteroalky lyn, (C2 to C10) cyclo heteroalky lyn, (C6 to C10) aryl, and (C2 to Cg) heteroaryl is optionally substituted with at least one R22 group;
or R20a and R20b may be taken together with the nitrogen atom to which they are attached to form a (C2 to C10) cyclo heteroalky lyn ring, wherein said (C2 to C10) cyclo heteroalky lyn ring has 1 to 3 ring heteratoms selected from the group consisting of N, O, and S, and wherein the said (C2 to C10) cyclo heteroalky lyn ring is optionally substituted with at least one R22 group;
each R21 is independently selected from hydrogen, halogen, OH, nitro, CF3, (Ci to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy, cyano, (C3 to C10) cycloalky lyn, (Cs to C10) cyclo heteroalky lyn, (C2 to C10) cyclo heteroalky lyn, (Ce to C10) aryl, and (C2 to C9) heteroaryl;
each R22 is independently selected from hydrogen, halogen, OH, nitro, CF3, -NR23aR23b, oxo, (Ci to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy, (C3 to C10) cycloalky lyn, (Cs to C10) cyclo heteroalky lyn, (C2 to C10) cyclo heteroalky lyn, (C6 to C10) aryl, (C2 to Cg) heteroaryl, (C6 to C10) arylene, (C2 to Cg) heteroarylene, (C3 to C10) cycloalky lyn, and (C2to C10) cyclo heteroalky lyn is optionally substituted with at least one R25 group;
each of the said (C1 to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy, (C3 to C10) cycloalky lyn, (Cs to C10) cyclo heteroalky lyn, (C2 to Cg) heteroaryl, (C2 to Cg) heteroarylene, (C3 to C10) cycloalky lyn, and (C2to C10) cyclo heteroalky lyn is optionally substituted with at least one R25 group;each of the R23a and R23b is independently selected from hydrogen, (C1 to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (C3 to C10) cycloalky lyn, (Cs to C10) cyclo heteroalky lyn, (C2 to Cg) heteroaryl, (C2 to Cg) heteroarylene, (C3 to C10) cycloalky lyn, and (C2to C10) cyclo heteroalky lyn is optionally substituted with at least one R25 group;
each R24 is independently selected from hydrogen, halogen, OH, nitro, CF3, (Ci to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy, cyano, (C3 to C10) cycloalky lyn, (Cs to C10) cyclo heteroalky lyn, (C2 to Cg) heteroaryl, (C2 to Cg) heteroarylene, (C3 to C10) cycloalky lyn, and (C2to C10) cyclo heteroalky lyn is optionally substituted with at least one R25 group;each R25 is independently selected from hydrogen, halogen, OH, nitro, CF3, -NR26aR26b, oxo, (Ci to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy, cyano, (C3 to C10) cycloalky lyn, (Cs to C10) cyclo heteroalky lyn, (C2 to Cg) heteroaryl, (C2 to Cg) heteroarylene, (C3 to C10) cycloalky lyn, and (C2to C10) cyclo heteroalky lyn is optionally substituted with at least one R25 group;
each of the said \((\text{C}_1 \text{to C}_{10})\) alkyl, \((\text{C}_1 \text{to C}_{10})\) alkenyl, \((\text{C}_1 \text{to C}_{10})\) alkoxy, aryloxy, (C\text{3\to10}) cycloalkyl, (C\text{3\to10}) cycloalkenyl, (C\text{2\to10}) cycloalkylen, (C\text{2\to10}) cycloalkenyl, (C\text{2\to10}) heteroaryl, (C\text{9\to10}) aryloxy, (C\text{2\to10}) cycloalkylene, and (C\text{2\to10}) cycloalkenylene is optionally substituted at least one \(\text{R}^{27}\) group;

5 each of the \(\text{R}^{6a}\) and \(\text{R}^{6b}\) is independently selected from hydrogen, \((\text{C}_1 \text{to C}_{10})\) alkyl, \((\text{C}_1 \text{to C}_{10})\) alkenyl, \((\text{C}_1 \text{to C}_{10})\) cycloalkenyl, (C\text{9\to10}) cycloalkenyl, (C\text{2\to10}) aryloxy, (C\text{2\to10}) cycloalkylene, (C\text{2\to10}) cycloalkenylene, \((\text{C}_1 \text{to C}_{10})\) aryl, and (C\text{2\to9}) heteroaryl,
or \(\text{R}^{6a}\) and \(\text{R}^{6b}\) may be taken together with the nitrogen atom to which they are attached to form a \((\text{C}_2 \text{to C}_{10})\) cycloalkenyl ring, wherein

d said \((\text{C}_2 \text{to C}_{10})\) cycloalkenyl ring has 1 to 3 ring heteroatoms selected from the group consisting of N, O, and S;

10 each \(\text{R}^{27}\) is independently selected from hydrogen, halogen, OH, nitro, CF\text{3}, \((\text{C}_1 \text{to C}_{10})\) alkyl, \((\text{C}_1 \text{to C}_{10})\) alkenyl, \((\text{C}_1 \text{to C}_{10})\) cycloalkenyl, \((\text{C}_1 \text{to C}_{10})\) cycloalkylene, \((\text{C}_1 \text{to C}_{10})\) cycloalkenylene, \((\text{C}_2 \text{to C}_{10})\) cycloalkenyl, \((\text{C}_2 \text{to C}_{10})\) cycloalkenylen, \((\text{C}_3 \text{to C}_{10})\) cycloalkenyl, \((\text{C}_3 \text{to C}_{10})\) cycloalkenylen, \((\text{C}_2 \text{to C}_{10})\) aryl, \((\text{C}_2 \text{to C}_{9})\) heteroaryl;

15 h is 1 or 2;
i is 2, 3, 4, 5, or 6;
j is 0, 1, 2, 3, 4, or 5;
k is 1, 2, 3, 4, or 5;
m is 0, 1 or 2;
n is 0, 1, 2, 3, or 4;

20 with the proviso that when \(\text{R}^1\) is phenyl, \(\text{R}^2\) is hydrogen, \(\text{R}^3\) is hydrogen, \(\text{X}\) is C-A-D, \(\text{Y}\) is CH\text{2},

A is a bond, and D is \(\text{NR}^7\text{AR}^7\), then \(\text{NR}^7\text{AR}^7\) is not \(\text{R}^8\)

and with the proviso that when \(\text{R}^1\) is selected from the group consisting of 4-methylphenyl, 3,4-dimethylphenyl, and 4-methoxyphenyl, \(\text{R}^2\) is hydrogen, \(\text{R}^3\) is hydrogen, \(\text{X}\) is C-A-D, \(\text{Y}\) is CH\text{2},

25 A is a bond, then D is not selected from the group consisting of \(\text{NR}^7\text{AR}^7\),

and with the proviso that when \(\text{R}^1\) is 4-chlorophenyl, \(\text{R}^2\) is hydrogen, \(\text{R}^3\) is hydrogen, \(\text{X}\) is C-A-D, \(\text{Y}\) is CH\text{2}, A is a bond, and D is selected from the group consisting of

\(\text{NR}^7\text{AR}^7\) and \(\text{NR}^7\text{AR}^7\),

then \(\text{NR}^7\text{AR}^7\) is not selected from the group consisting of

\(\text{NR}^7\text{AR}^7\)

and with the proviso that the following compounds shall be excluded:
The compound of claim 36, wherein:

X is C-A-D and Y is CR₄R₅.

The compound of claim 37, wherein:

X is C-A-D and Y is CR₄R₅.
A is -C(R^6aR^6b)_{R^7b};

$$D = \text{NR}^7a\text{R}^7b;$$

R^1 is selected from (C6 to C10) aryl and (C2 to C9) heteroaryl, wherein each of the said (C6 to C10) aryl and (C2 to C9) heteroaryl is optionally substituted with at least one R^{13} group;

R^4 is hydrogen;

R^5 is hydrogen.

The compound of claim 38, wherein:

R^2 is selected from hydrogen, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkynyl, (C3 to C10) cycloalkyl, (C3 to C10) cycloalkenyl, (C1 to C10) alkoxy, -(CH_2)nC(0)N(R^{11a}R^{11b}), and -(C(0)R^{12},

wherein each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkynyl, (C3 to C10) cycloalkyl, (C3 to C10) cycloalkenyl, and (C1 to C10) alkoxy is optionally substituted with at least one R^{13} group;

R^3 is selected from hydrogen, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkynyl, (C3 to C10) cycloalkyl, (C3 to C10) cycloalkenyl, wherein each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkynyl, (C3 to C10) cycloalkyl, (C3 to C10) cycloalkenyl is optionally substituted with at least one R^{13} group.

The compound of claim 39, wherein:

R^2 is hydrogen.

The compound of claim 40, wherein:

A is -C(R^6aR^6b)_{R^7b};

$$D = \text{NR}^7a\text{R}^7b;$$

R^1 is selected from (C6 to C10) aryl and (C2 to C9) heteroaryl, wherein each of the said (C6 to C10) aryl and (C2 to C9) heteroaryl is optionally substituted with at least one R^{13} group;

R^4 is hydrogen;

R^5 is hydrogen.

The compound of claim 37, wherein:

A is -C(R^6aR^6b)_{R^7b};
D is selected from (C6 to C10) aryl and (C2 to C9) heteroaryl, wherein each of the said (C6 to C10) aryl and (C2 to C9) heteroaryl is optionally substituted with at least one R1 group;

R2 is selected from hydrogen, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkynyl, (C3 to C10) cycloalkyl, (C3 to C10) cycloalkenyl, (C3 to C10) alkoxy, -(CH2)nC(=O)N(RaRb), and -C(=O)R12, wherein each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkynyl, (C3 to C10) cycloalkyl, (C3 to C10) cycloalkenyl, and (C3 to C10) alkoxy is optionally substituted with at least one R13 group;

R3 is hydrogen;

R4 is hydrogen;

R5 is hydrogen.

The compound of claim 43, wherein:

A is -C(R6>R6b)2;

D is selected from the group consisting of

\[
\begin{align*}
\text{O} & \quad \text{O} \\
\text{S} & \quad \text{N} \\
\text{NR}^{7a} \text{R}^{7b} & \quad \text{S} \\
\text{NR}^{7a} \text{R}^{7b} & \quad \text{NR}^{7a} \text{R}^{7b},
\end{align*}
\]

and

R is selected from (C1 to C10) aryl and (C2 to C9) heteroaryl, wherein each of the said (C1 to C10) aryl and (C2 to C9) heteroaryl is optionally substituted with at least one R1 group;

R2 is selected from hydrogen, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkynyl, (C3 to C10) cycloalkyl, (C3 to C10) cycloalkenyl, (C3 to C10) alkoxy, -(CH2)nC(=O)N(R11aR11b), and -C(=O)R12, wherein each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkynyl, (C3 to C10) cycloalkyl, (C3 to C10) cycloalkenyl, and (C3 to C10) alkoxy is optionally substituted with at least one R13 group;

R3 is hydrogen;

R4 is hydrogen;

R5 is hydrogen.

The compound of claim 43, wherein:

A is -C(R6>R6b)2;

D is selected from the group consisting of

\[
\begin{align*}
\text{O} & \quad \text{O} \\
\text{S} & \quad \text{N} \\
\text{NR}^{7a} \text{R}^{7b} & \quad \text{S} \\
\text{NR}^{7a} \text{R}^{7b} & \quad \text{NR}^{7a} \text{R}^{7b},
\end{align*}
\]

R is selected from (C1 to C10) aryl and (C2 to C9) heteroaryl, wherein each of the said (C1 to C10) aryl and (C2 to C9) heteroaryl is optionally substituted with at least one R1 group;
each of the said (C6 to C10) aryl and (C2 to C9) heteroaryl is optionally substituted with at least one R13 group;

R2 is selected from hydrogen, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkyln, (C3 to C10) cycloalkyl, (Cs to C10) cycloalkenyl, (C1 to C10) alkoxy, -(CH2)nC(=O)N(Ra Ra), and -C(=O)R12,

wherein
each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkyln, (C3 to C10) cycloalkyl, (Cs to C10) cycloalkenyl, and (C1 to C10) alkoxy is optionally substituted with at least one R13 group;

R3 is hydrogen;

R4 is hydrogen;

R5 is hydrogen.

46. The compound of claim 36, wherein:

x is C-A-D and y is a bond.

47. The compound of claim 46, wherein:

A is -C(R6-R6)q;

D is selected from the group consisting of

\[ \text{NR}^7a\text{R}^7b, \text{NR}^7a\text{R}^7b, \text{and} \ \text{NR}^7a\text{R}^7b; \]

R1 is selected from (C6 to C10) aryl and (C2 to C9) heteroaryl, wherein
each of the said (C6 to C10) aryl and (C2 to C9) heteroaryl is optionally substituted with at least one R13 group.

R2 is selected from hydrogen, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkyln, (C3 to C10) cycloalkyl, (Cs to C10) cycloalkenyl, (C1 to C10) alkoxy, -(CH2)nC(=O)N(R11s-R11t), and -C(=O)R12,

wherein
each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkyln, (C3 to C10) cycloalkyl, (Cs to C10) cycloalkenyl, and (C1 to C10) alkoxy is optionally substituted with at least one R15 group;

R3 is hydrogen.

48. The compound of claim 36, wherein:

x is CR5 and y is CR4-A-D.

49. The compound of claim 48, wherein:

A is -C(R6-R6)q;

D is selected from the group consisting of

\[ \text{NR}^7a\text{R}^7b, \text{NR}^7a\text{R}^7b, \text{and} \ \text{NR}^7a\text{R}^7b; \]

R1 is selected from (C6 to C10) aryl and (C2 to C9) heteroaryl, wherein
each of the said (C6 to C10) aryl and (C2 to C9) heteroaryl is optionally substituted with at least one R13 group;

R2 is selected from hydrogen, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkyln, (C3 to C10) cycloalkyl, (Cs to C10) cycloalkenyl, (C1 to C10) alkoxy, -(CH2)nC(=O)N(R11s-R11t), and -C(=O)R12,
wherein each of the said (C\textsubscript{1} to C\textsubscript{10}) alkyl, (C\textsubscript{1} to C\textsubscript{10}) alkenyl, (C\textsubscript{1} to C\textsubscript{10}) alkynyl, (C\textsubscript{3} to C\textsubscript{10}) cycloalkenyl, and (C\textsubscript{1} to C\textsubscript{10}) alkoxy is optionally substituted with at least one R\textsuperscript{13} group; R\textsuperscript{3} is hydrogen; R\textsuperscript{4} is hydrogen; R\textsuperscript{5} is hydrogen.

50. The compound of claim 48, wherein:

\[ A = \text{-C} (R^8 \text{R}^8) \text{F}; \]

D is selected from the group consisting of

\begin{align*}
\text{O} & \quad \text{O} \\
\text{N}R^{7a}R^{7b} & \quad \text{N}R^{7a}R^{7b} \\
\text{and} & \quad \text{and}
\end{align*}

R\textsuperscript{1} is selected from hydrogen, (C\textsubscript{1} to C\textsubscript{10}) alkyl, (C\textsubscript{1} to C\textsubscript{10}) alkenyl, (C\textsubscript{1} to C\textsubscript{10}) alkynyl, (C\textsubscript{3} to C\textsubscript{10}) cycloalkenyl, (C\textsubscript{5} to C\textsubscript{10}) cycloalkenyl, (C\textsubscript{1} to C\textsubscript{10}) alkoxy, -(CH\textsubscript{2})\textsubscript{nC(0)}N(R\textsuperscript{11a}R\textsuperscript{11b}), and -C\textsubscript{6}H\textsubscript{11}\text{R}\textsuperscript{12}, wherein each of the said (C\textsubscript{1} to C\textsubscript{10}) alkyl, (C\textsubscript{1} to C\textsubscript{10}) alkenyl, (C\textsubscript{1} to C\textsubscript{10}) alkynyl, (C\textsubscript{3} to C\textsubscript{10}) cycloalkenyl, (C\textsubscript{5} to C\textsubscript{10}) cycloalkenyl, (C\textsubscript{1} to C\textsubscript{10}) alkoxy is optionally substituted with at least one R\textsuperscript{13} group; R\textsuperscript{2} is selected from hydrogen, (C\textsubscript{1} to C\textsubscript{10}) alkyl, (C\textsubscript{1} to C\textsubscript{10}) alkenyl, (C\textsubscript{1} to C\textsubscript{10}) alkynyl, (C\textsubscript{3} to C\textsubscript{10}) cycloalkeny, (C\textsubscript{5} to C\textsubscript{10}) cycloalkenyl, (C\textsubscript{1} to C\textsubscript{10}) alkoxy, -(CH\textsubscript{2})\textsubscript{nC(0)}N(R\textsuperscript{11a}R\textsuperscript{11b}), and -C\textsubscript{6}H\textsubscript{11}\text{R}\textsuperscript{12}, wherein each of the said (C\textsubscript{1} to C\textsubscript{10}) alkyl, (C\textsubscript{1} to C\textsubscript{10}) alkenyl, (C\textsubscript{1} to C\textsubscript{10}) alkynyl, (C\textsubscript{3} to C\textsubscript{10}) cycloalkenyl, (C\textsubscript{5} to C\textsubscript{10}) cycloalkenyl, (C\textsubscript{1} to C\textsubscript{10}) alkoxy is optionally substituted with at least one R\textsuperscript{13} group; R\textsuperscript{3} is selected from hydrogen, (C\textsubscript{1} to C\textsubscript{10}) alkyl, (C\textsubscript{1} to C\textsubscript{10}) alkenyl, (C\textsubscript{1} to C\textsubscript{10}) alkynyl, (C\textsubscript{3} to C\textsubscript{10}) cycloalkenyl, and (C\textsubscript{5} to C\textsubscript{10}) cycloalkenyl, wherein each of the said (C\textsubscript{1} to C\textsubscript{10}) alkyl, (C\textsubscript{1} to C\textsubscript{10}) alkenyl, (C\textsubscript{1} to C\textsubscript{10}) alkynyl, (C\textsubscript{3} to C\textsubscript{10}) cycloalkenyl, (C\textsubscript{5} to C\textsubscript{10}) cycloalkenyl is optionally substituted with at least one R\textsuperscript{13} group; R\textsuperscript{4} is selected from (C\textsubscript{6} to C\textsubscript{10}) aryl and (C\textsubscript{2} to C\textsubscript{9}) heteroaryl, wherein each of the said (C\textsubscript{6} to C\textsubscript{10}) aryl and (C\textsubscript{2} to C\textsubscript{9}) heteroaryl is optionally substituted with at least one R\textsuperscript{13} group; R\textsuperscript{5} is hydrogen.

51. The compound of claim 50, wherein:

\[ R^1 \text{ is hydrogen;} \]

\[ R^2 \text{ is hydrogen;} \]

\[ R^3 \text{ is hydrogen.} \]

52. A compound represented by Structural Formula I
or a pharmaceutically acceptable salt, and a pharmaceutically acceptable carrier, diluent, or
vehicle thereof, wherein:

- \( X \) is \( C_{A-D} \), and \( Y \) is a bond or \( C_R^{+R^+} \); or
- \( X \) is \( C_R^5 \) and \( Y \) is \( C_R^{+A-D} \);
- \( A \) is \( (C_6 \text{ to } C_{10}) \) arylene or \( (C_2 \text{ to } C_9) \) heteroarylene, wherein
each of the said \( (C_6 \text{ to } C_{10}) \) arylene or \( (C_2 \text{ to } C_9) \) heteroarylene is optionally substituted with at
least one \( R^6 \) group;
- \( D \) is selected from the group consisting of

\[
\begin{align*}
\text{[diagram showing chemical structures]} & \quad \text{and other chemical structures not shown}
\end{align*}
\]

\( R^{10b} \) is selected from the group consisting of

\[
\begin{align*}
\text{[diagram showing chemical structures]} & \quad \text{and other chemical structures not shown}
\end{align*}
\]

\( R^1 \) is selected from hydrogen, halogen, \( \text{OH} \), \( \text{nitro} \), \( \text{CF}_3 \), \( -\text{NR}_a \text{R} \), \( \text{aryloxy} \), \( \text{cyano} \), \( \text{cycloalkyl} \), \( \text{aryloxy} \), and \( \text{acyl} \) groups;

\( R^2 \) is selected from hydrogen, halogen, \( \text{OH} \), \( \text{nitro} \), \( \text{CF}_3 \), \( -\text{NR}_a \text{R} \), \( \text{acyl} \) groups; and

\( R^3 \) is selected from hydrogen, halogen, \( \text{OH} \), \( \text{nitro} \), \( \text{CF}_3 \), \( -\text{NR}_a \text{R} \), \( \text{acyl} \) groups;
cycloalkenyl, (C2 to C9) cycloalkenyl, (C6 to C10) aryl, (C2 to C9) heteroaryl, -
C(0)R12,-C(0)NR14sR11b,-S(0)mR12,-S(0)mNR11aR11b,-NR11aS(0)mNR11aR12,-(CH2)nNC(0)OR12,-
(CH2)nNC(0)N(R11aR11b), -(CH2)nH, (R11aR11b), -(CH2)nN(R11aR11b), -OC(0)R12,-NR11aC(0)R12, and -
NR11aC(0)N(R11aR11b), wherein

- each of the said (Ci to C10) alkyl, (Ci to C10) arylkyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy,
aryloxy, (C3 to C10) cycloalkenyl, (Cs to C10) cycloalkenyl, (C2 to C9) cycloalkenyl,
(Ceto C10) aryl, and (C2 to C9) heteroaryl is optionally substituted with at least one R13 group;

R3 is selected from hydrogen, halogen, OH, nitro, CF3, -NR11aR11b,(Ci to C10) alkyl, (Ci to C10)
alkeny, (Ci to C10) alkoxy, (C3 to C10) cycloalkenyl, (Cs to C10) cycloalkenyl, (C2 to C9) cycloalkenyl,
(Ceto C10) aryl, and (C2 to C9) heteroaryl is optionally substituted with at least one R13 group;

R1 is selected from hydrogen, halogen, OH, nitro, CF3, -NR11aR11b,(Ci to C10) alkyl, (Ci to C10)
alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy, (C3 to C10) cycloalkenyl, (Cs to C10) cycloalkenyl,
(C2 to C9) cycloalkenyl, (Ceto C10) aryl, (C2 to C9) heteroaryl, -
C(0)R12,-C(0)NR14sR11b,-S(0)mR12,-S(0)mNR11aR11b,-NR11aS(0)mNR11aR12,-(CH2)nNC(0)OR12,-
(CH2)nNC(0)N(R11aR11b), -(CH2)nH, (R11aR11b), -(CH2)nN(R11aR11b), -OC(0)R12,-NR11aC(0)R12, and -
NR11aC(0)N(R11aR11b), wherein

- each of the said (Ci to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy,
aryloxy, (C3 to C10) cycloalkenyl, (Cs to C10) cycloalkenyl, (C2 to C9) cycloalkenyl,
(Ceto C10) aryl, and (C2 to C9) heteroaryl is optionally substituted with at least one R13 group;

R5 is selected from hydrogen, halogen, OH, nitro, CF3, -NR11aR11b,(Ci to C10) alkyl, (Ci to C10)
alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy, (C3 to C10) cycloalkenyl, (Cs to C10) cycloalkenyl,
(C2 to C9) cycloalkenyl, (Ceto C10) aryl, (C2 to C9) heteroaryl, -
C(0)R12,-C(0)NR14sR11b,-S(0)mR12,-S(0)mNR11aR11b,-NR11aS(0)mNR11aR12,-(CH2)nNC(0)OR12,-
(CH2)nNC(0)N(R11aR11b), -(CH2)nH, (R11aR11b), -(CH2)nN(R11aR11b), -OC(0)R12,-NR11aC(0)R12, and -
NR11aC(0)N(R11aR11b), wherein

- each of the said (Ci to C10) alkyl, (Ci to C10) alkenyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy,
aryloxy, (C3 to C10) cycloalkenyl, (Cs to C10) cycloalkenyl, (C2 to C9) cycloalkenyl,
(Ceto C10) aryl, and (C2 to C9) heteroaryl is optionally substituted with at least one R13 group;

each of the R6a and R6b is independently selected from hydrogen, halogen, OH, nitro, CF3, -
-NR11aR11b,(Ci to C10) alkyl, (Ci to C10) arylkyl, (Ci to C10) alkynyl, (Ci to C10) alkoxy,
aryloxy, (C3 to C10) cycloalkenyl, (Cs to C10) cycloalkenyl, (C2 to C9) cycloalkenyl,
(Ceto C10) aryl, (C2 to C9) heteroaryl, -C(0)R12,-C(0)NR14sR11b,-S(0)mR12,-S(0)mNR11aR11b,-NR11aS(0)mNR11aR12,-
(CH2)nNC(0)OR12,-(CH2)nNC(0)N(R11aR11b), -(CH2)nH, (R11aR11b), -(CH2)nN(R11aR11b), -OC(0)R12,-NR11aC(0)R12, and -
NR11aC(0)N(R11aR11b), wherein
each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkynyl, (C1 to C10) alkoxy, aryloxy, (C3 to C10) cycloalkyl, (C3 to C10) cycloalkenyl, (C2 to C9) cycloalkynyl, (C2 to C9) cycloalkoxy, (C3 to C9) aryl, and (C2 to C9) heteroaryl is optionally substituted with at least one R group;

each R8 is independently selected from hydrogen, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, aryloxy, (C3 to C10) cycloalkyl, (C3 to C10) cycloalkenyl, (C2 to C9) cycloalkynyl, (C2 to C9) cycloalkoxy, (C3 to C9) aryl, and (C2 to C9) heteroaryl, wherein

each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, aryloxy, (C3 to C10) cycloalkyl, (C3 to C10) cycloalkenyl, (C2 to C9) cycloalkynyl, (C2 to C9) cycloalkoxy, (C3 to C9) aryl, and (C2 to C9) heteroaryl is optionally substituted with at least one R13 group;

each of the R8a, R8b, and R8c is independently selected from hydrogen, halogen, OH, nitro, CF3, -NR11-R11b, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, aryloxy, cyano, (C3 to C10) cycloalkyl, (C3 to C10) cycloalkenyl, (C2 to C9) cycloalkynyl, (C2 to C9) cycloalkoxy, (C3 to C9) aryl, and (C2 to C9) heteroaryl, wherein

each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, aryloxy, (C3 to C10) cycloalkyl, (C3 to C10) cycloalkenyl, (C2 to C9) cycloalkynyl, (C2 to C9) cycloalkoxy, (C3 to C9) aryl, and (C2 to C9) heteroaryl is optionally substituted with at least one R13 group;

each of the R11a and R11b is independently selected from hydrogen, (C1 to C11) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, aryloxy, (C3 to C10) cycloalkyl, (C3 to C10) cycloalkenyl, (C2 to C9) cycloalkynyl, (C2 to C9) cycloalkoxy, (C3 to C9) aryl, and (C2 to C9) heteroaryl, wherein

each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, aryloxy, (C3 to C10) cycloalkyl, (C3 to C10) cycloalkenyl, (C2 to C9) cycloalkynyl, (C2 to C9) cycloalkoxy, (C3 to C9) aryl, and (C2 to C9) heteroaryl is optionally substituted with at least one R13 group,
or R11a and R11b may be taken together with the nitrogen atom to which they are attached to form a (C2 to C10) cycloalkyl ring, wherein

said (C2 to C10) cycloalkyl ring has 1 to 3 ring heteroatoms selected from the group consisting of N, O, and S, wherein

the said (C2 to C10) cycloalkyl ring is optionally substituted with at least one R13 group;
each of the R12 is independently selected from hydrogen, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C2 to C10) alkynyl, (C2 to C10) alkoxy, aryloxy, (C3 to C10) cycloalkyl, (C3 to C10) cycloalkenyl, (C2 to C9) cycloalkynyl, (C2 to C9) cycloalkoxy, (C3 to C9) aryl, and (C2 to C9) heteroaryl, wherein

each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, aryloxy, (C3 to C10) cycloalkyl, (C3 to C10) cycloalkenyl, (C2 to C9) cycloalkynyl, (C2 to C9) cycloalkoxy, (C3 to C9) aryl, and (C2 to C9) heteroaryl is optionally substituted with at least one R13 group.
each R13 is independently selected from hydrogen, halogen, OH, nitro, CF3, -NR14aR14b, oxo, (C3 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkynyl, (C1 to C10) alkoxy, argly, cyano, (C3 to C10) cycloalkyl, (Cs to C10) cycloalkenyl, (C2 to C9) cycloalkyl, (C6 to C10) heteroaryl, (C6 to C10) heteroarylene, (C3 to C10) cycloalkylene, (C2 to C10) cycloalkyl, (C3 to C10) cycloalkylene, (C2 to C10) cycloalkylene, (C3 to C10) cycloalkylene, and (C2 to C10) cycloalkylene is optionally substituted with at least one R16 group; each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, (C3 to C10) cycloalkyl, (Cs to C10) cycloalkenyl, (C1 to C10) alkynyl, (C2 to C10) cycloalkyl, (C6 to C10) heteroaryl, and (C2 to C10) heteroaryl is optionally substituted with at least one R16 group; or R14a and R14b may be taken together with the nitrogen atom to which they are attached to form a (C2 to C10) cycloalkyl ring, wherein said (C2 to C10) cycloalkyl ring has 1 to 3 ring heteroatoms selected from the group consisting of N, O, and S, and wherein the said (C2 to C10) cycloalkyl ring is optionally substituted with at least one R16 group; each R15 is independently selected from hydrogen, (C1 to C10) alkynyl, (C1 to C10) alkenyl, (C2 to C10) cycloalkyl, (C2 to C10) cycloalkenyl, (C2 to C10) cycloalkyl, (C6 to C10) heteroaryl, and (C2 to C10) heteroaryl, wherein each of the said (C1 to C10) alkynyl, (C1 to C10) alkenyl, (C1 to C10) alkynyl, (C1 to C10) alkenyl, (C6 to C10) heteroaryl, and (C2 to C10) heteroaryl is optionally substituted with at least one R16 group; each R16 is independently selected from hydrogen, halogen, OH, nitro, CF3, -NR17aR17b, oxo, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, arlyxo, cyano, (C3 to C10) cycloalkyl, (C1 to C10) alkenyl, (C2 to C10) cycloalkyl, (C6 to C10) heteroaryl, (C6 to C10) heteroaryl, (C2 to C10) cycloalkyl, (C2 to C10) cycloalkyl, (C3 to C10) cycloalkylene, (C2 to C10) cycloalkylene, (C2 to C10) cycloalkylene, (C2 to C10) cycloalkylene, (C2 to C10) cycloalkylene, and (C2 to C10) cycloalkylene, wherein each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, (C3 to C10) cycloalkyl, (C1 to C10) alkenyl, (C2 to C10) cycloalkyl, (C6 to C10) heteroaryl, and (C2 to C10) heteroaryl is optionally substituted with at least one R16 group; each R17 is independently selected from hydrogen, halogen, OH, nitro, CF3, -NR18aR18b, oxo, (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, arlyxo, cyano, (C3 to C10) cycloalkyl, (C1 to C10) alkenyl, (C2 to C10) cycloalkyl, (C6 to C10) heteroaryl, (C6 to C10) heteroaryl, (C2 to C10) cycloalkyl, (C2 to C10) cycloalkyl, (C3 to C10) cycloalkylene, (C2 to C10) cycloalkylene, (C2 to C10) cycloalkylene, (C2 to C10) cycloalkylene, (C2 to C10) cycloalkylene, and (C2 to C10) cycloalkylene, wherein each of the said (C1 to C10) alkyl, (C1 to C10) alkenyl, (C1 to C10) alkoxy, (C3 to C10) cycloalkyl, (C1 to C10) alkenyl, (C2 to C10) cycloalkyl, (C6 to C10) heteroaryl, and (C2 to C10) heteroaryl is optionally substituted with at least one R16 group;
heteroaryl, (C₅ to C₁₀) aryl, (C₂ to C₉) heteroarylene, (C₃ to C₁₀) cycloalkylene, and (C₂ to C₁₀) cyclohydroarylene is optionally substituted with at least one R¹ group;

each of the R¹⁷a and R¹⁷b is independently selected from hydrogen, (C₁ to C₁₀) alkyl, (Cᵢ to C₁₀) alkenyl, (Ci to C₁₀) alkynyl, (Ci to C₁₀) alkoxy, (C₃ to C₁₀) cycloalkyi, (Cs to C₁₀) cycloalkenyln, (C₂ to C₁₀) cyclohydroaryln, (C₉ to C₁₀) aryl, (C₂ to C₉) heteroaryl, (C₈ to C₁₀) arylene, and (C₂ to C₈) heteroarylene, wherein

each of the said (C₁ to C₁₀) alkyl, (Ci to C₁₀) alkenyl, (Ci to C₁₀) alkynyl, (Ci to C₁₀) alkoxy, aryloxy, (C₃ to C₁₀) cycloalkyi, (Cs to C₁₀) cycloalkenyln, (C₂ to C₁₀) cyclohydroaryln, (C₈ to C₁₀) aryl, (C₂ to C₈) heteroaryl, (C₈ to C₁₀) arylene, and (C₂ to C₈) heteroarylene is optionally substituted with at least one R¹ group,
or R¹⁷a and R¹⁷b may be taken together with the nitrogen atom to which they are attached to form a (C₂ to C₁₀) cyclohydroarylni ring, wherein

said (C₂ to C₁₀) cyclohydroarylni ring has 1 to 3 ring heteroatoms selected from the group consisting of N, O, and S, and wherein

the said (C₂ to C₁₀) cyclohydroarylni ring is optionally substituted with at least one R¹ group;

each R¹ is independently selected from hydrogen, halogen, OH, nitro, CF₃, (Ci to C₁₀) alkyl, (Ci to C₁₀) alkenyl, (Ci to C₁₀) alkynyl, (Ci to C₁₀) alkoxy, aryloxy, cyano, (C₃ to C₁₀) cycloalkyi, (Cs to C₁₀) cycloalkenyln, (C₂ to C₁₀) cyclohydroaryln, (C₆ to C₁₀) aryl, and (C₂ to C₉) heteroaryl, wherein

each of the said (C₁ to C₁₀) alkyl, (Ci to C₁₀) alkenyl, (Ci to C₁₀) alkynyl, (Ci to C₁₀) alkoxy, aryloxy, cyano, (C₃ to C₁₀) cycloalkyi, (Cs to C₁₀) cycloalkenyln, (C₂ to C₁₀) cyclohydroaryln, (C₂ to C₉) heteroaryl, and (C₈ to C₁₀) aryl is optionally substituted with at least one R¹ group;

each R¹ is independently selected from hydrogen, halogen, OH, nitro, CF₃, -NR₂ₐR₂₀b, oxo, (Ci to C₁₀) alkyl, (Ci to C₁₀) alkenyl, (Ci to C₁₀) alkynyl, (Ci to C₁₀) alkoxy, aryloxy, cyano, (C₃ to C₁₀) cycloalkyi, (Cs to C₁₀) cycloalkenyln, (C₂ to C₁₀) cyclohydroaryln, (C₆ to C₁₀) aryl, (C₂ to C₉) heteroaryl, (C₈ to C₁₀) arylene, (C₂ to C₈) heteroarylene, (C₃ to C₁₀) cycloalkylene, (C₂ to C₁₀) cyclohydroarylene, -C(0)R ₂¹,-(C(0))NR ₂₀ₐR₂₀b, -S(0)mR ₂¹,-S(0)mNR ₂₀ₐR₂₀b, -NR₂ₐS(0)mR ₂¹,-(CH₂)ₙNC (0)OR ₂¹,-(CH₂)ₙNC (O)(R ₂₀ₐR₂₀b)-,-(CH₂)ₙN (R ₂₀ₐR₂₀b)-,OC(0)R ₂¹,-NR₂ₐC(0)R ₂¹, and -NR₂ₐC(0)N(R ₂₀ₐR₂₀b), wherein

each of the said (C₁ to C₁₀) alkyl, (Ci to C₁₀) alkenyl, (Ci to C₁₀) alkynyl, (Ci to C₁₀) alkoxy, aryloxy, (C₃ to C₁₀) cycloalkyi, (Cs to C₁₀) cycloalkenyln, (C₂ to C₁₀) cyclohydroaryln, (C₂ to C₈) heteroaryl, (C₈ to C₁₀) arylene, (C₂ to C₈) heteroarylene, (C₃ to C₁₀) cycloalkylene, and (C₂ to C₁₀) cyclohydroarylene is optionally substituted with at least one R²² group;
each of the R²₀ₐ and R₂₀b is independently selected from hydrogen, (C₁ to C₁₀) alkyl, (Ci to C₁₀) alkenyl, (Ci to C₁₀) alkynyl, (Ci to C₁₀) alkoxy, aryloxy, (C₃ to C₁₀) cycloalkyi, (Cs to C₁₀) cycloalkenyln, (C₂ to C₁₀) cyclohydroaryln, (C₈ to C₁₀) aryl, and (C₂ to C₈) heteroaryl, wherein

each of the said (C₁ to C₁₀) alkyl, (Ci to C₁₀) alkenyl, (Ci to C₁₀) alkoxy, aryloxy, (C₃ to C₁₀) cycloalkyi, (Cs to C₁₀) cycloalkenyln, (C₂ to C₁₀) cyclohydroaryln, (C₂ to C₁₀) cyclohydroaryln, (C₂ to C₈) heteroaryl, and (C₂ to C₈) heteroarylene is optionally substituted with at least one R²² group,
or $R^{20a}$ and $R^{20b}$ may be taken together with the nitrogen atom to which they are attached to form a $(C_2$ to $C_{10})$ cycloheteroalkyl ring, wherein

said $(C_2$ to $C_{10})$ cycloheteroalkyl ring has 1 to 3 ring heteroatoms selected from the group consisting of N, O, and S, and wherein

the said $(C_2$ to $C_{10})$ cycloheteroalkyl ring is optionally substituted with at least one $R^{22}$ group;

each $R^{21}$ is independently selected from hydrogen, halogen, OH, nitro, CF3, (Cl to C10) alkyl, (Cl to C10) alkenyl, (Cl to C10) alkynyl, (Cl to C10) alkoxy, aryloxy, cyano, $(C_3$ to C10) cycloalkyl, $(C_3$ to C10) cycloalkenyl, $(C_2$ to C10) cycloalkenyl, (C6 to C10) aryl, and (C2 to C9) heteroaryl;

each $R^{22}$ is independently selected from hydrogen, halogen, OH, nitro, CF3, -NR23aR23b, oxo,

$(C_3$ to C10) alkyl, (Cl to C10) alkenyl, (Cl to C10) alkynyl, (Cl to C10) alkoxy, aryloxy, cyano, $(C_3$ to C10) cycloalkyl, $(C_3$ to C10) cycloalkenyl, (C2 to C10) cycloalkenyl, (C6 to C10) aryl, and (C2 to C9) heteroaryl;

$(C_3$ to C10) arylene, (C2 to C9) heteroarylene, (C3 to C10) cycloalkylene, (C2 to C10) cycloalkenylen, -C(0)R 24, -C(0)NR 23aR23b, -S(0)mR 24, -S(0)mNR 23aR23b, -NR23aS(0)mR 24, -$(CH_n)C(0)OR$ 24, -$(CH_n)C(0)N(R 23aR23b)$, -$(CH_n)N(R 23aR23b)$, -OC(0)R 24, -NR23aC(0)R 24, and -NR23aC(0)N(R 23aR23b), wherein

each of the said $(C_1$ to $C_{10})$ alkyl, (Cl to C10) alkenyl, (Cl to C10) alkynyl, (Cl to C10) alkoxy, aryloxy, (C3 to C10) cycloalkyl, $(C_3$ to C10) cycloalkenyl, (C2 to C10) cycloalkenyl, $(C_2$ to C9) heteroaryl, $(C_2$ to C9) heteroaryl, (C2 to C9) heteroaryl, (C3 to C10) cycloalkylene, and (C2 to C10) cycloalkenylen is optionally substituted with at least one R25 group;

each of the R23a and R23b is independently selected from hydrogen, (C1 to C10) alkyl, (Cl to C10) alkenyl, (Cl to C10) alkynyl, (Cl to C10) acetoxy, aryloxy, (C3 to C10) cycloalkenyl, (C3 to C10) cycloalkenyl, (C2 to C10) cycloalkenyl, (C6 to C10) aryl, and (C2 to C9) heteroaryl;

each R24 is independently selected from hydrogen, halogen, OH, nitro, CF3, (Cl to C10) alkyl,

$(C_3$ to C10) alkenyl, (Cl to C10) alkynyl, (Cl to C10) alkoxy, aryloxy, cyano, $(C_3$ to C10) cycloalkenyl, $(C_3$ to C10) cycloalkenyl, (C2 to C10) cycloalkenyl, (C6 to C10) aryl, (C2 to C9) heteroaryl,

$(C_3$ to C10) arylene, (C2 to C9) heteroarylene, (C3 to C10) cycloalkylene, (C2 to C10) cycloalkenylen, -C(0)R 27, -C(0)NR 23aR23b, -S(0)mR 27, -S(0)mNR 23aR23b, -NR23aS(0)mR 27, -$(CH_n)C(0)OR$ 27, -$(CH_n)C(0)N(R 23aR23b)$, -$(CH_n)N(R 23aR23b)$, -OC(0)R 27, -NR23aC(0)R 27, and -NR23aC(0)N(R 23aR23b), wherein

each of the said $(C_1$ to $C_{10})$ alkyl, (Cl to C10) alkenyl, (Cl to C10) alkynyl, (Cl to C10) alkoxy, aryloxy, (C3 to C10) cycloalkyl, $(C_3$ to C10) cycloalkenyl, (C2 to C10) cycloalkenyl, $(C_2$ to C9) heteroaryl, $(C_2$ to C9) heteroaryl, (C2 to C9) heteroaryl, (C3 to C10) cycloalkylene, and (C2 to C10) cycloalkenylen is optionally substituted with at least one R27 group;

each of the R23a and R23b is independently selected from hydrogen, (C1 to C10) alkyl, (Cl to C10) alkenyl, (Cl to C10) alkynyl, (Cl to C10) alkoxy, aryloxy, (C3 to C10) cycloalkenyl, (C2 to C10) cycloalkenyl, (C6 to C10) aryl, and (C2 to C9) heteroaryl.
or \( R^{26a} \) and \( R^{26b} \) may be taken together with the nitrogen atom to which they are attached to form a \((C_2\text{to} C_{10})\) cycloheteroalkyi ring, wherein

said \((C_2\text{to} C_{10})\) cycloheteroalkyi ring has 1 to 3 ring heteroatoms selected from the group consisting of \( N, O, \) and \( S \);

each \( R^{27} \) is independently selected from hydrogen, halogen, \( OH \), \( nitro \), \( CF_3 \), \((C_1\text{to} C_{10})\) alkyl, \((C_1\text{to} C_{10})\) alkenyl, \((C_1\text{to} C_{10})\) alkynyl, \((C_1\text{to} C_{10})\) alkoxy, \( aryloxy \), \( cyano \), \((C_3\text{to} C_{10})\) cycloalkyi, \((C_3\text{to} C_{10})\) cycloalkenyl, \((C_2\text{to} C_{10})\) cycloheteroalkyi, \((C_6\text{to} C_{10})\) aryl, \((C_2\text{to} C_{9})\) heteroaryl;

\( h \) is 1 or 2;

\( i \) is 2, 3, 4, 5, or 6;

\( j \) is 0, 1, 2, 3, 4, or 5;

\( k \) is 1, 2, 3, 4, or 5;

\( m \) is 0, 1 or 2;

\( n \) is 0, 1, 2, 3, or 4;

with the proviso that when \( X \) is \( C-A-D \), and \( Y \) is \( CH_2 \), then \( R^j \) is not selected from the group consisting of hydrogen and methyl, and with the proviso that the following compounds shall be excluded:

53. The compound of claim 52, wherein:

\[ D = \text{alkyl} - R^{10b} \]

54. A compound selected from the group consisting of:
The compound of claim 54 selected from the group consisting of

![Chemical Structures]

and
STATEMENT UNDER ARTICLE 19 (1)

In response to the International Search Report dated 01 June 2017 regarding above referenced PCT patent application, applicant submits replacement sheets 157 to 209 under PCT Article 19. The following changes have been made:

Claim 1 is amended; claims 2 to 23 are unchanged; claim 24 is amended; claim 25 is unchanged; claims 26 and 27 are amended; claims 28 to 35 are unchanged; claim 36 is amended; claims 37 to 51 are unchanged; claims 52 and 53 are amended; claim 54 and 55 are unchanged.

It is believed that the amendments do not go beyond the disclosure of the application as filed.