CLAIMS

Claim 1. A method of treating HCV-HIV coinfection comprising administering to a patient in need thereof an effective amount of an agent that inhibits binding of a said HCV and HIV viruses to a host μ subunit of clathrin adaptor protein (AP) complexes.

Claim 2. The method of claim 1, wherein said μ subunit is selected from the group consisting of μ subunits of clathrin AP1, AP2, AP3 and AP4 complexes.

Claim 3. The me thod of claim 2, wherein said μ subunit is selected from the group consisting of AP2M1, AP1M1, AP3M1 and AP4M1.

Claim 4. The method of claim 1, wherein said agent inhibits AAK1 or GAK.

Claim 5. The method of claim 1, wherein said agent is selected from the group consisting of erlotinib, sunitinib and PKC-412.

Claim 6. A method of inhibiting infections by a Lentiviridae, HIV, HCV/HIV co-infection, Flaviviridae other than HCV, clathrin AP binding viruses other than Flaviviridae, or clathrin AP binding viruses other than HCV, the method comprising administering to a patient in need thereof an effective amount of an agent that inhibits binding of a structural protein from said virus comprising a YXXΦ or dileucine motif to a host μ subunit of clathrin adaptor protein (AP) complexes.

Claim 7. The method of claim 6, wherein said μ subunit is selected from the group consisting of μ subunits of clathrin AP1, AP2, AP3 and AP4 complexes.

Claim 8. The me thod of claim 7, wherein said μ subunit is selected from the group consisting of AP2M1, AP1M1, AP3M1 and AP4M1.

Claim 9. The method of claim 6, wherein said agent inhibits AAK1 or GAK.

Claim 10. The method of claim 6, wherein said agent is selected from the group consisting of erlotinib, sunitinib and PKC-412.

Claim 11. A method of screening for antiviral agents comprising:

contacting a clathrin AP binding virus, Flaviviridae, Lentiviridae, HCV, HIV, Flaviviridae other than HCV, clathrin AP binding viruses other than

Flaviviridae, or clathrin AP binding viruses other than HCV or protein thereof with a candidate agent and a host μ subunit of clathrin adaptor protein (AP) complexes, and determining an effect of said candidate agent on the binding of said clathrin AP binding virus, Flaviviridae, Lentiviridae, HCV, HIV, Flaviviridae other than HCV, clathrin AP binding viruses other than Flaviviridae, or clathrin AP binding virus other than HCV to said protein.

Claim 12. A method of screening for antiviral agents comprising:

contacting a clathrin AP binding virus, Flaviviridae, Lentiviridae, HCV, HIV, Flaviviridae other than HCV, clathrin AP binding viruses other than Flaviviridae, or clathrin AP binding virus other than HCV virus with a candidate agent and a cell expressing a host μ subunit of clathrin adaptor protein (AP) complexes and determining the effect of said candidate agent on viral assembly or budding.

Claim 13. The method of claim 11, wherein said candidate agent inhibits the activity of AAK1 or GAK.

Claim 14. A method of inhibiting assembly or budding of a Flaviviridae, a virus other than a Flaviviridae, or a virus other than HCV in a host cell comprising contacting said host cell with an agent that prevents binding of a viral structural protein comprising a YXXΦ or dileucine motif to a host μ subunit of clathrin adaptor protein (AP) complexes, whereby said assembly or budding is inhibited.

Claim 15. The method of claim 14, wherein said agent blocks binding of said structural protein to said host protein.

Claim 16. The method of claim 14, wherein said agent competes with said structural protein for binding to said host protein.

Claim 17. The method of claim 14, wherein said agent competes with said host protein for binding to said structural protein.

CLAIMS

Claim 1. Use of an agent in the manufacture of a medicament for use in treating HCV-HIV coinfection, wherein the agent comprises sunitinib or pharmaceutically acceptable salt of sunitinib.

Claim 2. The use of claim 1, wherein said sunitinib or pharmaceutically acceptable salt of sunitinib inhibits binding of the HCV and HIV viruses to a host μ subunit of clathrin adaptor protein (AP) complexes comprising μ subunits of clathrin API, AP2, AP3 and AP4 complexes.

Claim 3. The use of claim 2, wherein said μ subunit is selected from the group consisting of AP2M1, AP1M1, AP3M1 and AP4M1.

Claim 4. The use of claim 1, wherein sunitinib or pharmaceutically acceptable salt of sunitinib inhibits AAK1 or GAK.

Claim 5. The use of claim 1, wherein said agent further comprises erlotinib, PKC-412, or pharmaceutically acceptable salts or combinations thereof.

Claim 6. Use of an agent in the manufacture of an inhibitor of infections by a Lentiviridae, HIV, HCV/HIV co-infection, Flaviviridae other than HCV, clathrin AP binding viruses other than Flaviviridae, or clathrin AP binding viruses other than HCV, wherein said agent comprises sunitinib or pharmaceutically acceptable salt of sunitinib.

Claim 7. The use of claim 6, wherein said sunitinib or pharmaceutically acceptable salt of sunitinib inhibits binding of a protein from said virus comprising a YXXΦ or dileucine motif to a host μ subunit of clathrin adaptor protein (AP) complexes, and wherein said μ subunit is selected from the group consisting of μ subunits of clathrin API, AP2, AP3 and AP4 complexes.

Claim 8. The use of claim 7, wherein said μ subunit is selected from the group consisting of AP2M1, AP1M1, AP3M1 and AP4M1.

Claim 9. The use of claim 6, wherein said sunitinib or pharmaceutically acceptable salt of sunitinib inhibits AAK1 or GAK.

Claim 10. The use of claim 6, wherein said agent further comprises erlotinib, PKC-412 or pharmaceutically acceptable salts or combinations thereof.

Claim 11. A method of screening for antiviral agents comprising:

contacting a clathrin AP binding virus, Flaviviridae, Lentiviridae, HCV, HIV, Flaviviridae other than HCV, clathrin AP binding viruses other than Flaviviridae, or clathrin AP binding viruses other than HCV or protein thereof with a candidate agent and a host μ subunit of clathrin adaptor protein (AP) complexes, and determining an effect of said candidate agent on the binding of said clathrin AP binding virus, Flaviviridae, Lentiviridae, HCV, HIV, Flaviviridae other than HCV, clathrin AP binding viruses other than Flaviviridae, or clathrin AP binding virus other than HCV to said μ subunit of clathrin adaptor protein (AP) complexes.

Claim 12. A method of screening for antiviral agents comprising:

contacting a clathrin AP binding virus, Flaviviridae, Lentiviridae, HCV, HIV, Flaviviridae other than HCV, clathrin AP binding viruses other than Flaviviridae, or clathrin AP binding virus other than HCV virus with a candidate agent and a cell expressing a host μ subunit of clathrin adaptor protein (AP) complexes and determining the effect of said candidate agent on viral assembly or budding.

Claim 13. The method of claim 11, wherein said candidate agent inhibits the activity of AAK1 or GAK.

Claim 14. Use of an agent in the manufacture of an inhibitor of assembly or budding of a Flaviviridae, a virus other than a Flaviviridae, or a virus other than HCV in a host cell, wherein said agent comprises sunitinib or a pharmaceutically acceptable salt of sunitinib, whereby said assembly or budding is inhibited.

Claim 15. The use of claim 14, wherein said sunitinib or a pharmaceutically acceptable salt of sunitinib blocks binding of a viral structural protein to a host protein.

Claim 16. The use of claim 14, wherein said sunitinib or a pharmaceutically acceptable salt of sunitinib competes with a viral protein for binding to a host protein.

Claim 17. The use of claim 14, wherein said sunitinib or a pharmaceutically acceptable salt of sunitinib competes with a host protein for binding to a viral protein.

Claim 18. The use of claim 6, wherein sunitinib or pharmaceutically acceptable salt of sunitinib inhibits infection by a Flaviviridae other than HCV in a patient.

Claim 19. The use of claim 18, wherein the Flaviviridae other than HCV comprises a Dengue virus.

Claim 20. The use of claim 14, wherein said agent further comprises erlotinib, PKC-412 or pharmaceutically acceptable salts or combinations thereof.