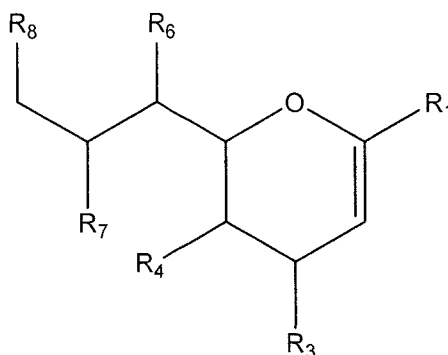


[0006] An initial interaction of the parainfluenza virus with the host cell is through its surface glycoprotein, haemagglutinin-neuraminidase (HN) and involves recognition of *N*-acetylneuraminic acid-containing glycoconjugates. The parainfluenza virus HN is a multifunctional protein that encompasses the functions of receptor binding (for cell adhesion) and receptor destruction (facilitating virus release), not only within the one protein, but apparently in a single binding site. In addition, the HN is involved in activation of the viral surface fusion (F) protein necessary to initiate infection of the target host cell. Inhibition of haemagglutinin and/or neuraminidase enzymes may therefore provide a target for antivirals.

SUMMARY

[0007] According to a first aspect of the invention, there is provided a compound of formula (I), or a pharmaceutically acceptable salt thereof:



Formula (I)

wherein, R₁ is selected from the group consisting of COOH, or a salt thereof, C(O)NR₉R₁₀, C(O)OR₁₁ wherein R₉, R₁₀ and R₁₁ are independently selected from the group consisting of hydrogen and optionally substituted C₁-C₆ alkyl;

R₃ is selected from the group consisting of N-linked triazole substituted at one or both ring carbon atoms, optionally substituted N-linked tetrazole, optionally substituted N-linked indole, optionally substituted N-linked isoindole, and optionally substituted N-linked benzotriazole;

[0012] In another example, there is disclosed a compound as disclosed herein, or a pharmaceutically effective salt thereof, or the pharmaceutical composition of the second aspect for use in the treatment of a disease, disorder or condition caused by viral infection in a patient.

[0013] In one aspect, the present invention refers to use of a compound as described herein, or a pharmaceutically effective salt thereof, in the manufacture of a medicament for the treatment of a disease, disorder or condition caused by viral infection.

[0014] In one example, the disease, disorder or condition is influenza.

[0015] The influenza may be influenza A, B or C or parainfluenza.

[0016] In one example, the parainfluenza is an hPIV-1, -2 or -3 virus.

[0017] Preferably, the patient is a domestic or livestock animal or a human.

[0018] In one example, there is disclosed a method of modulating the activity of a viral haemagglutinin and/or neuraminidase enzyme including the step of contacting the enzyme with a compound as disclosed herein. In another aspect, the present invention refers to use of a compound as described herein, or a pharmaceutically effective salt thereof in the manufacture of a medicament for modulating the activity of a viral hemagglutinin and/or neuraminidase enzyme.

[0019] The various features and embodiments of the present invention, referred to in individual sections above apply, as appropriate, to other sections, *mutatis mutandis*. Consequently features specified in one section may be combined with features specified in other sections as appropriate.

[0020] Further features and advantages of the present invention will become apparent from the following detailed description.

BRIEF DESCRIPTION OF THE DRAWINGS

[0021] In order that the invention may be readily understood and put into practical effect, preferred embodiments will now be described by way of example with reference to the accompanying figures wherein:

11. A pharmaceutical composition comprising an effective amount of a compound of any one of claim 1 to claim 10, or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier, diluent and/or excipient.
12. The pharmaceutical composition of claim 11 wherein the pharmaceutical composition is for the treatment or prophylaxis of a disease, disorder or condition caused by viral infection.
13. Use of a compound of any one of claim 1 to claim 10, or a pharmaceutically effective salt thereof, or the pharmaceutical composition of claim 11 or claim 12, in the manufacture of a medicament for treating a disease, disorder or condition caused by viral infection.
14. The use of claim 13 wherein the disease, disorder or condition is an infection caused by an influenza or parainfluenza virus.
15. The use of claim 14 wherein the infection is caused by the influenza A, B or C or parainfluenza virus
16. The use of claim 15 wherein the parainfluenza virus is selected from the group consisting of the hPIV-1, 2 or 3 virus.
17. The use of any one of claim 13 to claim 16 wherein the patient is a domestic or livestock animal or a human.
18. Use of a compound of any one of claim 1 to claim 10, or a pharmaceutically effective salt thereof in the manufacture of a medicament for modulating the activity of a viral hemagglutinin and/or neuraminidase enzyme.
19. The use of claim 18 wherein the modulating is inhibiting and the viral haemagglutinin and/or neuraminidase is a parainfluenza haemagglutinin and/or neuraminidase.