cases and deaths were caused by EV71 infection. EV71 C4 subtype is a major epidemic strain in China, whereas EV71 C1, C2, C4, B3, and B4 subtypes are prevalent in other regions of Asia (Yang, Ren et al. 2009).

[0005] HFMD spreads from patients to people by direct contact with mouth and nose discharges, blister fluids, and feces from infected persons (Solomon, Lewthwaite et al. 2010). Infected people are most contagious one week after disease onset, but contagiousness persists even after symptoms were improved (Han, Ma et al. 2010). Many infected people (including most infected adults) do not have symptoms. Children with oral rashes are easier to be diagnosed through clinical and follow-up virology diagnosis.

[0006] At present, no HFMD vaccines and drugs are available. The only way to treat patients and to prevent spreading has been hygiene, supportive care, pain relief, mouthwash, and intravenous immunoglobulin (Chinese Ministry of Health 2010). Although vaccines have been in development, protection efficiency, however, still remains unknown, and still requires long period of time for large-scale vaccination to be implemented.

[0007] Therefore, there is an urgent need to develop drugs that can prevent and treat HFMD in the field, especially, developing drugs that inhibit EV71 and CVA16 viral infection to achieve prevention and treatment from the source.

SUMMARY

[0008] The object of the embodiments disclosed herein is to provide compositions and methods for the treatment of viral diseases.

[0009] There is provided the use of a P2X receptor antagonist for the preparation of compositions for inhibiting positive-sense single-stranded RNA picornavirus.

[009a] In an aspect, there is provided the use of a P2X receptor antagonist for the manufacture of a medicament for treating~~, preventing or alleviating~~ a disease or condition caused by a positive-sense singl-stranded RNA picornavirus, the disease or condition being hand foot and mouth disease, the P2X receptor antagonist being selected from the group consisting of: PPADS, iso-PPADS, PPNDS, Suramin, NF023, TNP-ATP, NF279, NF157, Evans Blue, and/or an analog thereof or a derivative thereof, and/or a pharmaceutically acceptable salt thereof.

[0010] In a preferred embodiment, the P2X receptor antagonist is used for the preparation of compositions for preventing, alleviating, or treating HFMD.

CLAIMS

1. Use of a P2X receptor antagonist for the manufacture of a medicament for treating~~, preventing or alleviating~~ a disease or condition caused by a positive-sense single-stranded RNA picornavirus~~,~~.

~~2. The use of claim 1, characterized in that~~ the disease or condition ~~is~~ being hand foot and mouth disease, the P2X receptor antagonist being selected from the group consisting of: PPADS, iso-PPADS, PPNDS, Suramin, NF023, TNP-ATP, NF279, NF157, Evans Blue, and/or an analog thereof or a derivative thereof, and/or a pharmaceutically acceptable salt thereof.

~~3~~2. The use of claim 1~~ or 2~~, characterized in that the medicament is formulated for: systemic administration or parenteral administration; preferably, the composition is used for oral administration, intravenous injection, intramuscular injection, or inhalation.

~~4. The use of claim 1, characterized in that, the P2X receptor antagonist is selected from the group consisting of: PPADS, iso-PPADS, PPNDS, Suramin, NF023, TNP-ATP, NF279, NF157, Evans Blue, and/or an analog thereof or a derivative thereof, and/or a pharmaceutically acceptable salt thereof.~~

~~5~~3. The use of claim 1, characterized in that, the virus is an enterovirus.

~~6~~4. The use of claim 1, characterized in that, the virus is an enterovirus A.

~~7~~5. The use of claim 1, characterized in that, the virus is a human enterovirus 71 or a Coxsackie virus.

6. The use of claim 1, wherein total daily dose of the P2X receptor antagonist is at 0.01-200 mg/kg body weight.

7. The use of claim 1, wherein total daily dose of the P2X receptor antagonist is at 0.25-100 mg/kg body weight.

8. The use of claim 1, wherein total daily dose of the P2X receptor antagonist is at 0.5-50 mg/kg body weight.

9. The use of claim 1, wherein the P2X receptor antagonist is Suramin, total daily dose is of Suramin at 50 mg/kg body weight.

10. The use of claim 1, wherein the P2X receptor antagonist is divided into several doses for administration in a day.