

PIM1 Inhibitors for the Treatment of Viral Infection



Health & Wellness

Biomedical and Genetic Engineering

Opportunity

Viral infections cause a number of severe diseases threatening human health. EV-A71 is an RNA virus which mainly causes infection of HFMD, and in some cases could cause neurological diseases. Since 2008, large HFMD epidemics have posed an ongoing threat to public health in China, resulting in hundreds of deaths in 2012 alone. Zika virus outbreaks have occurred worldwide, leading to immune system dysfunction in adults and severe symptoms in fetuses and infants.

Despite their widespread effects, there are currently limited effective treatments or methods of control for viral infections such as those causing HFMD and Zika virus disease.

Therefore, better understanding on the biological mechanism that causes viral infections for the development of adequate therapeutic interventions for the treatment of viral infections are urgently required. PIM1 is an enzyme mainly involved in cell survival pathways and it is known to involve in human diseases including cancer and inflammatory disorders, but the correlation between PIM1 and viral infections is limited.

Technology

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This invention first discovers that the increased or decreased amount of PIM1 potentially suppressed or promoted reproduction of virus, including EV-A71 and Zika virus, respectively.

This invention further developed PIM1 inhibitors, which are small molecules or biomolecules made up of nucleic acids, to suppress the reproduction of the virus.

Advantages

- Fill the gap of the understanding on the viral infection in view of the newly discovered correlation between PIM1 and the RNA viruses
- Provide PIM1 inhibitors useful for suppressing the viral reproduction
- Develop pharmaceuticals to delay pathological progress and alleviate the symptoms of the illness or disorder caused by a viral infection

IP Status

Patent filed



Technology Readiness Level (TRL) ?

4

Inventor(s)

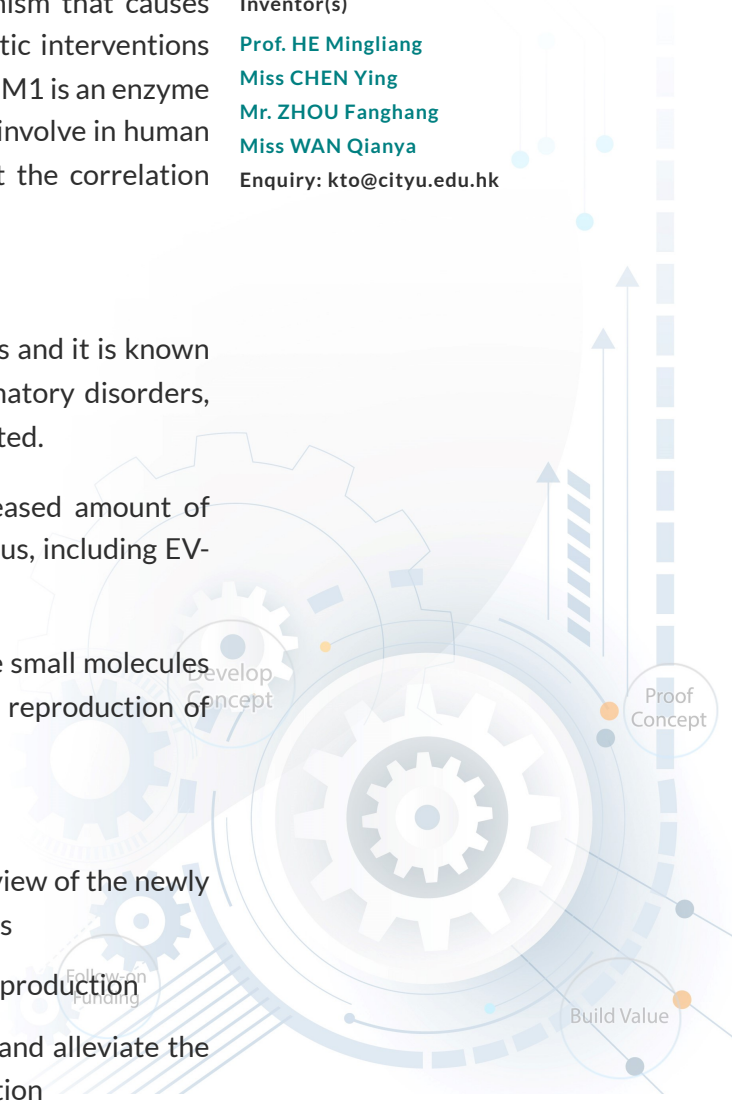
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Applications

- Treating viral infections
- Delaying the pathological progression of EV-A71 associated diseases.
- Blocking the pathological procession during the embryonic development when pregnant women who is infected by Zika virus
- Treating cancers

