Repurposing of an FDA Approved Drug for Treatment of Enterovirus D68

Title: Repurposing of an FDA approved drug for treatment of Enterovirus D68

Invention: This technology uses a FDA approved drug for the treatment of Enterovirus D68-2Apro. While this drug has been FDA approved for other diseases, the inventors have found that it is also a powerful antiviral against EVD68-2pro. Initial studies on this antiviral show that it targets EV-D68 2Apro through a nearly irreversible, biphasic binding mechanism. In cell culture, this drug showed sub-micromolar to low micromolar potency against several clinically relevant human EV-D68 strains in different human cell lines. Repurposing of this FDA approved drug has potential to be the first treatment for EV-D68, which currently has no vaccines or antivirals for treatment.

Background: Enterovirus D68 (EV-D68) is a viral pathogen that infects the respiratory tract and has led to several outbreaks worldwide, including one in the United States in 2014 that heavily affected children. Since the early 2010’s, EV-D68 continues to see a rise in number of cases worldwide in a 2 year period, regional climate changes is believed to be a major factor differentiating the occurrence of it Worldwide, however, its origins or real causes are unknown due to a lack of R&D. EV-D68 has been associated with sever CNS diseases such as Acute Flaccid Myelitis (AFM). Because AFM is not an official reportable disease, physicians are not obligated to report if they diagnose the disease, resulting in inaccurate information as to the real number of occurrence of disease. No vaccines or any form of treatment specifically targeting the disease exist, potentially making the repurposing of Telavir for treatment of EV-D68 the first direct treatment.

Applications:

• Treatment of Enteroviruses
• Treatment of EV-D68
• Preventive Treatment of AFM

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Advantages:

• Attractive for potential licensee, to use their approved drug to potentially treat two different diseases.

• Cost Effective

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