TEC EDMONTON

LICENSING OPPORTUNITY

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Inhibitors of Viral Infectivity

AMPHIPATHIC NUCLEOSIDE DERIVATIVES AS FUSION INHIBITORS

A series of small pharmacological molecules have been discovered to be potent and non-cytotoxic inhibitors of viral fusion. The inhibitors act on the non-virally encoded lipids in the virion envelope. These molecules are rigid amphipathic compounds of inverted cone shape which locate to the outer leaflets of virion envelopes, creating a physical barrier to viral envelope and cell membrane fusion.

These amphipathic nucleoside derivatives can serve as potential antiviral or therapeutic agents against herpes, HIV, influenza, hepatitis B & C, poxvirus and other DNA or RNA enveloped viruses. They can potentially be used as prophylactic ingredients in creams, lotions, gels and as antiviral disinfectants.

ADVANTAGES

Since the viral envelope is highly conserved these fusion inhibitors may offer considerable advantages over traditional antiviral interventions. By specifically targeting the viral envelope (not viral protein) the risk of selecting for resistance will likely be reduced. Furthermore, the highly conserved lipid bilayer shared among most enveloped viruses may allow these fusion inhibitors to act against a wide range of enveloped viruses (including both DNA & RNA enveloped viruses).

- Low concentrations of amphipathic nucleoside derivatives can inhibit the infectivity of mature virions.
- These molecules can inhibit the infectivity of virions with a safety index greater than 1,000 and without any major cytotoxic or cytostatic effects.
- Animal studies indicated that these molecules can neutralize and prevent the sexual transmission of HSV-2.
- *In vitro* data illustrated that these nucleoside derivatives can inhibit the infectivity for a range of RNA & DNA enveloped viruses including: HSV1,2, vesicular stomatitis and Sindbis
- ***Testing underway against COVID-19***

FOR MORE INFORMATION CONTACT:

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TECHNOLOGY DETAILS	
Technology number	20006074
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Protection status	US8633308 CA2679257