Assay for Non-Nucleoside Inhibitors of the Measles and Nipah Viruses

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Technology description

Technical Summary

Vaccination serves as the only technology presently available to prevent measles virus infection. However, immunity takes weeks to develop and vaccination is contra-indicated in immune compromised individuals. In addition, the current vaccine cannot be administered to infants due to the interference of maternal antibodies. There are currently no existing therapeutics for case management of measles or the rapid control of outbreaks. These factors make it highly desirable to develop cost-effective therapeutics against MV that augment the existing vaccination program.

This technology describes the development and implementation of an efficient cell-based assay for high-throughput screening of MV antivirals. The assay has yielded several hit candidates, one of which is potent in nano-molar ranges. Mechanistic studies reveal that these compounds are the first non-nucleoside inhibitors of the MV RNA-dependent RNA polymerase complex. Certain synthesized analogs fall in the 0.5 - 2.0 nM range and represent the most highly active non-peptidic and non-nucleosidic MV inhibitors known.

These compounds have been proven as active (potency in the low mM range) against the Nipah virus, a member of the paramyxovirus that has been classified as a potential biological weapon.

Application area

A cell-based assay to screen for inhibitors of the measles virus (MV). Highly active compounds have been identified and analogs have been synthesized and evaluated.

Advantages

Potent (sub-nM range), non-peptidic, non-nucleosidic compounds.

Robust, cell-based, high-throughput screening assay.

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