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School of Engineering

RESEARCHPROJECT

Institute Life Technologies

Replication inhibitors of respiratory syncytial virus

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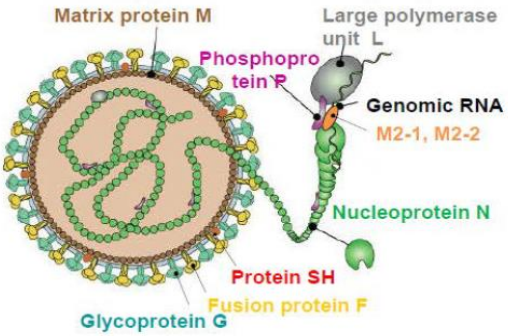
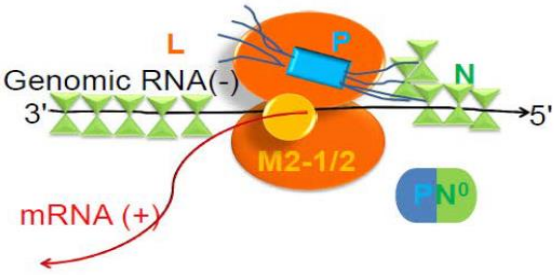
Description Lower respiratory infection is one of the leading causes of human death worldwide, and is the most important cause of mortality in infants. Among the pathogens responsible for these infections, human respiratory syncytial virus (RSV) accounts for approximately 20% of all respiratory infections in infants. To modulate transcription and replication, RSV uses a helical nucleocapsid containing the nucleoprotein N bound to genomic RNA, the polymerase cofactor P, the viral polymerase L and M2-1 matrix protein.

In this project, we have identified novel molecules that interfere with the binding of N to P, HEVS 77 and HEVS 78. These peptides are derived from the phosphoprotein P and inhibit viral replication in Hep2 cells with EC_{50} values of 60 and 15 μM, respectively. While HEVS 77 shows no cytotoxicity, HEVS 78 is cytotoxic at 100 μM. Further work is currently in progress to improve the selectivity and potency of these molecules.



Schematic representation of the respiratory syncytial virus



Schematic representation of the RNA dependent RNA replication mechanism of RSV

URL http://itv.hevs.ch/

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