Winning the war against Human parainfluenza virus

October 20 2014

Researchers at Griffith University's Institute for Glycomics have moved a step closer to identifying a treatment for the dreaded Human parainfluenza virus (hPIV).

These highly-infectious viruses are the leading cause of upper and lower respiratory tract disease in young children, including Croup, responsible for thousands of hospitalisations in the developed world, and hundreds of thousands of deaths each year in developing countries.

Institute Director Professor Mark von Itzstein said his Group's research findings published in the prestigious journal *Nature Communications* today (Monday 20 October) provided a new direction towards the discovery of anti-viral drugs against hPIV.

"hPIV gains entry to human respiratory epithelial cells by attaching to carbohydrate receptors. They then enter cells and reproduce rapidly, causing illness," he said.

"In this study, we used a multi-disciplinary approach to develop potent inhibitors that target a structural feature within the hPIV type 3 haemagglutinin-neuraminidase (hPIV-3 HN)."

"These dual acting designer inhibitors represent the most potent designer compounds and efficiently block both HPIV cell entry and virion progeny release."

"To date, neither antiviral drugs nor vaccines are approved for clinical use against human parainfluenza virus, which reinforces the urgent need for new therapeutic discovery strategies.

"This discovery will advance research in the design and synthesis of new drugs that may stop infection by hPIV," said Professor von Itzstein.

Provided by Griffith University