



## INFLUENZA THERAPEUTIC

Scientists at The Roslin Institute have developed a new method for combating flu, a disease that currently costs the UK economy about £1.35 billion each year.

### THE CHALLENGE

It is estimated that seasonal flu kills 4,000 people a year in the UK<sup>23</sup> and between 500,000 and 1 million worldwide. The current methods for combating the disease are vaccination and antiviral drugs but both approaches are problematic.

Vaccines are only partially effective because of the variety of different strains of influenza circulating at any one time. There are also problems with the efficacy of anti-viral drugs because many strains of the virus have evolved resistance to them.

Over 80% of currently circulating influenza strains are already resistant to the market leading anti-viral drug.

The ability of the flu virus to develop resistance to anti-viral drugs has led to concern about the potential impact of a mutant influenza virus. Such concern was heightened in 2009 with the emergence of a novel strain of the virus called H1N1 or swine flu. The need for novel and effective methods of combating flu, which are not subject to drug resistance is therefore acute.

## THE SOLUTION

Supported by a BBSRC Follow-on-Fund, scientists at The Roslin Institute have developed a new generation of broad-spectrum anti-influenza peptides with the scope to treat, as well as prevent, flu. Flupep works by preventing the influenza virus from entering cells it usually infects. This differs from currently available anti-virals that work by attacking the viral replication mechanism. This significantly reduces the risk of target viruses developing resistance to the treatment.

Flupep has been under development for three years and has been shown to be effective and non-toxic when tested in animal models. The research group are now working with industrial partners to develop the treatment further through preclinical and clinical studies to allow it to enter the market.



## THE IMPACT

Successfully bringing Flupep to market could result in large health care savings for the UK economy and generate significant revenue from drug sales.

It is estimated that sales of the drug could generate £100 million per year in years when the seasonal epidemic is prevalent and over £1 billion during pandemic years. Worldwide it is estimated that the market for anti-influenza treatments is worth \$4.5bn per year.

Each year around 7.6 million working days are lost in the UK due to flu. If Flupep could reduce this by even as much as 1%, the additional output created would contribute almost £12.8 million GVA to the UK economy.



## PROJECT DETAILS

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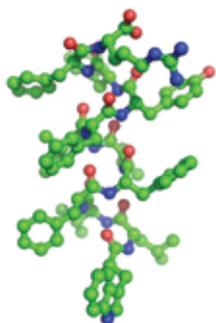
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<sup>23</sup> BBC News 4th January 2008, Universal flu jab works in people.



FluPep 12 mer peptide  
with predicted alpha-helix  
Structure.

Potent antiviral activity  
against Influenza virus



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