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Peptide-based therapy of influenza virus infection

This technology is available to access under the University's Open Technology initiative

Description of Technology

Broad-spectrum anti-influenza peptides have been developed to treat and prevent flu and a wider range of clinically relevant viral infections. These peptides have a novel mechanism of action, making them less likely to induce viral resistance and very effective at combatting flu.

Current anti-influenza therapy options are also restricted in efficacy by rapid viral evolution and subsequent drug resistance. Over 80% of currently circulating influenza strains are already resistant to the market leading anti-viral.

University of Edinburgh researchers have peptides that block entry of the influenza virus into the cells they would normally infect. This mode of action differentiates the technology from currently available therapies and, in doing so, facilitates potential as a combination therapy (as well as a monotherapy) and minimises, the risk of target viruses developing resistance. In a mouse model of influenza infection, viral titres were 4 logs lower in mice treated with the leading peptide compared to no treatment. *In vivo* and *in vitro* toxicological and safety studies have also been carried out.

- Scope to treat as well as prevent flu – effective in mice even days after infection
- Broad spectrum effect against all major flu strains, including H1,H3 and H5 strains
- Effective when delivered intra-nasally – capable of preventing influenza A infection delivered directly to the lung *in vivo*
- Safe to use with low toxicity and immunogenicity
- Small peptide facilitating manufacture and mindful of cost
- Mechanism of action which hinders resistance

Potential Applications

- Prevention and treatment of influenza

Key Publications

- A novel family of peptides with potent activity against influenza A viruses. Journal of General Virology, Vol. 93, 2012. http://bit.ly/1ke1ODz
- Patent application number WO/2012/013979 (lapsed)
- Flupep: A novel peptide for treatment of influenza virus infections. Third ISIRV- Antiviral Group Conference, 4-6 June 2014, Tokyo, Japan. http://bit.ly/1LZNGW3

Open Technology

Documentation describing the technology and invention (Follow-up information pack, copy of the published patent at PCT stage) will be provided following acceptance of the University's Open Technology standard terms and conditions.

University Services Available

The University will be keen to explore collaborative research opportunities in taking this forward. Consultancy is also available for accessing expertise accrued by our researchers in working with this technology. If required, please contact:

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