

**MEDIA INFORMATION**

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**New Data Proves Oseltamivir Effective Against Human H5N1 and Avian H5N1 Influenza  
Virus**

*Study confirms need to stockpile oseltamivir as a management strategy for the next pandemic*

**InterScience Conference on Antimicrobial Agents and Chemotherapy (ICAAC), Washington DC, 2<sup>nd</sup> November 2004:** New data presented confirm that oseltamivir (Tamiflu), an oral neuraminidase inhibitor (NAI), is effective against the human H5N1 and avian H5N1 influenza virus.<sup>1</sup> Since the influenza virus is constantly mutating, today's is the first data to show oseltamivir to be effective against this highly pathogenic strain, which is currently circulating in Vietnam and Thailand. A total of 44 cases of human infection - of which 32 have been fatal - have been detected since January.<sup>2</sup> These data are particularly important as avian influenza strains, such as H5N1, are considered by experts to be the most likely source of a pandemic strain, against which older antivirals are not effective.

Oseltamivir has previously been proven effective in the management of an outbreak of the H7N7 avian strain in the Netherlands in 2003, which infected around one thousand people. Oseltamivir was found to protect infected poultry workers from contracting the virus, where mouth and nose masks did not. The efficacy of oseltamivir suggests it has a potential role in the management of the H5N1 outbreak, and in future a vian influenza epidemics.

"These new data and the experience in the Netherlands add to previous studies by the WHO and the Centre for Disease Control and Prevention (CDC) in the US, and suggest that oseltamivir can be expected to be effective against any mutating influenza virus – which is the key to a pandemic", comments Professor John Oxford, Barts and The London, Queen Mary's School of Medicine and Dentistry, London, UK, who led today's research. "Current estimates suggest that over one million people could lose their lives in the next pandemic, however, for the

first time in human history, we could alleviate this devastating effect by the use of antiviral drugs such as oseltamivir.”

The World Health Organisation (WHO) estimates that, in a pandemic, it could take up to 12 months for a vaccine matching the pandemic strain to be developed and distributed, and recommends that antivirals such as oseltamivir are stockpiled by governments in advance.

“Since antivirals such as oseltamivir can be stockpiled, we are in a strong position to ensure that we are prepared for the next pandemic – however, few governments have adequate stock. Since oseltamivir can take up to a year to produce, I urge governments to follow WHO guidance and ensure that stockpiles of antivirals are assembled in good time to ensure they can protect their citizens until a vaccine is developed,” concludes Professor John Oxford.

**- Ends -**

## **Notes to Editors**

### **About Retroscreen Virology Ltd**

Established 12 years ago, Retro Screen Virology is a biotechnology company affiliated to Queen Mary, University of London. Employing 20 people, RetroScreen specialises in laboratory and clinic-based respiratory virology research.

### **Queen Mary, University of London**

Queen Mary is the fourth largest of the Colleges of the University of London. Its roots lie in four historic colleges: Queen Mary College, Westfield College, St Bartholomew’s Hospital Medical College and the London Hospital Medical College. Pooling strengths, expertise and resources, Queen Mary is now fully integrated.

The College currently has over 10,000 undergraduate and postgraduate students, with an academic and support staff of around 2,600. It is organised into four faculties of Arts; Engineering and Mathematical Sciences; Law and Social Sciences; and Natural Sciences, and Barts and The London, Queen Mary’s School of Medicine and Dentistry. It is a research university, with over 80% of research staff working in departments where research is of international or national excellence (RAE 2001), and has a strong international reputation, with over 20 per cent of students coming from over 100 countries.

### **About Antivirals**

Neuraminidase inhibitors, such as oseltamivir, work by blocking the action of the neuraminidase

enzyme on the surface of the virus. When neuraminidase is inhibited, the virus is not able to spread to and infect other cells in the body. Neuraminidase inhibitors are effective – in contrast to the older antivirals, such as M2 inhibitors, against both influenza A and B viruses.

Oseltamivir, the only orally available NAI, is designed to be active against all clinically relevant influenza viruses,<sup>3</sup> and has demonstrated:

- ? 38 percent reduction in the severity of symptoms<sup>3</sup>
- ? 67 percent reduction in secondary complications such as bronchitis, pneumonia and sinusitis in otherwise healthy individuals<sup>4</sup>
- ? 37 percent reduction in the duration of influenza illness<sup>5</sup>
- ? Oseltamivir was shown to provide up to 89 percent overall protective efficacy against clinical influenza in adults and adolescents who had been in close contact with influenza-infected patients<sup>6</sup>

In children, Tamiflu delivers:

- ? 36 percent reduction in the severity and duration of influenza symptoms<sup>7</sup>
- ? 44 percent reduced incidence of associated otitis media as compared to standard care<sup>8</sup>

## References:

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<sup>1</sup> Oxford J et al. Antiviral Activity of Oseltamivir Carboxylate Against a Human Isolate of the current H5N1 chicken strain. Poster 3839, presented at the InterScience Conference on Antimicrobial Agents and Chemotherapy (ICAAC), Washington DC, USA on 31 October 2004

<sup>2</sup> [http://www.who.int/csr/don/2004\\_10\\_04/en/](http://www.who.int/csr/don/2004_10_04/en/)

<sup>3</sup> Treanor JJ et al. Efficacy and safety of the oral neuraminidase inhibitor oseltamivir in treating acute influenza: a randomized, controlled trial. *JAMA* 2000;283: 1016–24

<sup>4</sup> Kaiser et al. Impact of Oseltamivir treatment on influenza-related lower respiratory tract complications and hospitalisations. *Arch Intern Med.* 163:1667-1672 (2003)

<sup>5</sup> Nicholson KG et al. Efficacy and safety of oseltamivir in treatment of acute influenza: a randomised controlled trial. *Lancet* 2000; 355:1845–1850

<sup>6</sup> Welliver R. W. et al. Effectiveness of oseltamivir in preventing influenza in household contacts: a randomized controlled trial. *JAMA*, 2001 Feb 14; 285(6): 748-754

<sup>7</sup> Whitely RJ, Hayden FG et al; Oral oseltamivir treatment of influenza in children, *Pediatr Infect Dis J* 2000; 20: 122-133

<sup>8</sup> Roche data on file, 2003