

## Tamiflu

### Tamiflu: an introduction

Tamiflu<sup>®</sup> (oseltamivir phosphate) is an antiviral used in the treatment and prevention of influenza. Tamiflu belongs to a group of medicines called neuraminidase inhibitors (NAIs). NAIs are designed to specifically target the influenza virus and prevent viral replication inside the body by targeting one of the two surface structures of the influenza virus - the neuraminidase protein.

Neuraminidase enables the virus to continue to infect host cells. When neuraminidase is inhibited, the virus is unable to exit the host cell and dies. Therefore the virus is not able to spread to and infect other cells in the body. In contrast to the older antivirals, the M2 inhibitors, NAIs are effective against both influenza A and B viruses.

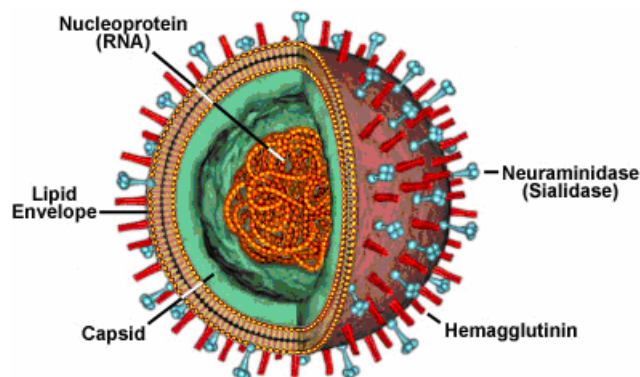


Figure 1. Structure of the influenza virus<sup>1</sup>

### Tamiflu: Efficacy

Tamiflu is designed to be active against all clinically relevant influenza viruses<sup>2</sup>. Tamiflu has been shown to be clinically effective for the treatment and prevention of influenza in adults and in children greater than 1 year of age.

- Tamiflu delivers:
  - 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>

- In children, Tamiflu delivers:
  - 26 percent reduction in the severity and duration of influenza symptoms<sup>6</sup>
  - 44 percent reduced incidence of associated otitis media as compared to standard care<sup>7</sup>

The benefits of Tamiflu are not only restricted to reducing the symptoms of influenza. Evidence suggests that treatment with Tamiflu leads to a reduction in secondary lower respiratory tract complications, bronchitis, pneumonia and hospitalisations<sup>4,8,9</sup>.

In clinical studies, Tamiflu has been shown to be highly effective, well tolerated and has demonstrated a good safety profile<sup>10</sup>.

#### **Tamiflu: A role in the management of pandemic influenza**

In the event of a pandemic the World Health Organisation (WHO) estimates that it may take at least five or six months before vaccines matching the new influenza strain can be produced on a large scale<sup>11</sup>. During this time, whilst vaccine development is progressing antivirals have a clinical role to play in the primary management of the first phase of a pandemic. Tamiflu has been tested by the WHO against various strains of influenza and has been proven effective against the avian H5, H7 and H9 strains of influenza. Recent data has also shown Tamiflu is effective against the H5N1 avian influenza virus<sup>12</sup> which is currently circulating in South East Asia.

The stockpiling of antivirals such as Tamiflu has been recommended since 1999 by the WHO as part of its Pandemic Preparedness Plan<sup>13</sup>, developed to guide governments with their preparations for a pandemic.

#### **Tamiflu: Administration and dosage**

Tamiflu is given orally, as a convenient capsule (75mg twice daily), enabling it to reach all key sites in the body where the virus multiplies<sup>14</sup>. The dose for the adult treatment of influenza is one capsule twice daily for five days. Treatment should begin as early as possible after onset of symptoms. The earlier oseltamivir is given, the quicker the patient recovers from influenza. For post exposure prevention of influenza the dosage is one capsule daily for 10 days.

#### **Tamiflu: Safety**

Results from treatment clinical studies showed that Tamiflu is well tolerated, with a few patients reporting transient, mostly mild nausea or vomiting - influenza itself can cause patients to feel nauseous. During long-term use in prevention studies these events were reported in similar incidence for Tamiflu compared to placebo. The adverse events were not associated with significant withdrawals from the trial and it was found that taking the drug with food improved tolerance<sup>10</sup>.

### Tamiflu: Registration

Tamiflu is available for the treatment and prevention of influenza in adults and children greater than one year of age. To date 34 million patients have been treated with Tamiflu, worldwide including United States, Japan, Canada, Australia, the EU, Switzerland and Latin America.

Tamiflu is licensed by F. Hoffmann - La Roche Ltd. from Gilead Sciences Inc.

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