What is Influenza Vaccine (Split Virion), Inactivated?

Influenza Vaccine (Split Virion), Inactivated is prepared from influenza virus A and B prevalent strains recommended by WHO. The virus are propagated in embryonated eggs. The virus-containing allantoic fluid is harvested, inactivated, concentrated, and purified. The virus is disrupted to produce a "split virus". The vaccine is a slightly opalescent liquid. Antibiotics are not used in the manufacture of influenza vaccine.

Components are as follows:
- A/California/7/2009(H1N1)pdm09-like virus (NYMC X-179A)……..15μɡ hemagglutinin
- A/Switzerland/9715293/2013(H3N2)-like virus (NIB-88)……………15μɡ hemagglutinin
- B/Phuket/3073/2013-like virus ( B/Phuket/3073/2013)……………….15μɡ hemagglutinin

Excipients: Na₂HPO₄, NaH₂PO₄, NaCl

Labeled at the cap, VVM type 7 is employed to indicate the cumulative heat exposure of a vial of vaccine so that health workers know whether products has exceeded pre-set limit.

What is Influenza Vaccine (Split Virion), Inactivated used for?

Influenza Vaccine (Split Virion), Inactivated is indicated for active immunization against influenza caused by the contained vaccine strain.

How is Influenza Vaccine (Split Virion), Inactivated used?

The vaccine is administered through lateral deltoid intramuscular injection in the upper arm injection. For persons of 9 years of age and older, one dose 0.5 vaccination is recommended.

What are the vaccine characteristics?

Influenza Vaccine (Split Virion), Inactivated must be stored at 2-8°C. Under these recommended storage conditions, the vaccine is stable for 12 months after the date of manufacture.

Who is the regulatory authority responsible for its oversight vis a vis WHO?

Influenza Vaccine (Split Virion), Inactivated was licensed in China, its country of manufacture, by China Food and Drug Administration (CFDA). CFDA is the authority responsible for the continuing oversight of this WHO prequalified vaccine.
How has Influenza Vaccine (Split Virion), Inactivated been studied from the clinical point of view?

To evaluate safety and immunogenicity of the vaccine, clinical trials of the phase III and phase IV were carried out respectively before and after market authorization. Three indicators including HI antibody positive conversion rate, the proportion of HI antibody protective level and the average fold increase of antibody after vaccination were assessed. Results from these pre- and post market studies indicate that 0.5 mL Influenza Vaccine (Split Virion) Inactivated manufactured by Hualan biological Bacterin Corporation provides good immunogenicity versus A(H1N1), A(H3N2), and Type B influenza virus. The Table below provides a summary of the immunogenicity data.

<table>
<thead>
<tr>
<th>Clinical phase</th>
<th>Year/virus strain</th>
<th>Subject(s) and age group</th>
<th>Type</th>
<th>HI antibody positive conversion rate (%)</th>
<th>HI antibody protective level (%)</th>
<th>Average fold increase of antibody</th>
</tr>
</thead>
<tbody>
<tr>
<td>III</td>
<td>2005-2006</td>
<td>500 (above 6 months)</td>
<td>H1N1</td>
<td>81.6</td>
<td>97.4</td>
<td>11.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>H3N2</td>
<td>92.4</td>
<td>98.6</td>
<td>21.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>B</td>
<td>78.0</td>
<td>95.6</td>
<td>7.3</td>
</tr>
<tr>
<td>IV</td>
<td>2011-2012</td>
<td>599 (above 3 years)*</td>
<td>H1N1</td>
<td>79.3</td>
<td>89.3</td>
<td>17.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>H3N2</td>
<td>82.8</td>
<td>98.3</td>
<td>15.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>B</td>
<td>67.6</td>
<td>93.0</td>
<td>6.3</td>
</tr>
</tbody>
</table>

* Number of study participants who were evaluated both for safety and immunogenicity. The actual number of study participants who received Influenza Vaccine (Split Virion) Inactivated and were evaluated for safety in the Phase IV trial actually was 3083 versus 3088 blank controls.

Another post-market study was carried out to compare the vaccine to two internationally established competitor products involving 600 trial subjects resulted in satisfactory and comparable safety and immunogenicity profiles.

Other information about evaluation of Influenza Vaccine (Split Virion), Inactivated:

As part of the prequalification process for Influenza Vaccine (Split Virion) Inactivated the Product Summary File and the responses provided by manufacturer to observations made by WHO has been reviewed for quality, safety and efficacy by WHO experts, and found to meet WHO requirements of WHO TRS 927, Annex 3.

During the assessment of the application the manufacturing facilities were audited by an expert WHO inspection team and WHO GMP requirements [WHO TRS 822, Annex 1] were met.
During the review period of the application WHO has conducted independent testing of batches of the vaccine for critical release parameters in contracted laboratories qualified by WHO as well with satisfactory results.