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(54) Title: INFLUENZA HEMAGGLUTININ AND NEURAMINIDASE VARIANTS

(57) Abstract: Polypeptides, polynucleotides, methods, compositions, and vaccines comprising (avian pandemic) influenza hemagglutinin and neuraminidase variants are provided.
**INTERNATIONAL SEARCH REPORT**

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC: C12N 7/00(2006.01); A61K 39/145(2006.01)

USPC: 435/235.1; 424/206.1

According to International Patent Classification (IPC) or to both national classification and IPC.

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

U.S.: 435/235.1; 424/206.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched.

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WEST (USPAT, USPGPUB, EPO, IPO, DERWENT), NCBI PUBMED

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>US 2002/0119445 A1 (PARING) Novel Recombinant Tryptophan Mutants of Influenza. 29 August 2002 (29.08.2002).</td>
<td>1, 2, 5, 6, 7, 26, 28, 29, 32, 33</td>
</tr>
<tr>
<td>Y</td>
<td>WAREING et al. Immunogenic and Isotype-Specific Responses to Russian and JUSCold-Adapted Influenza A Vaccine Donor Strains A/Leningrad/134/17/57, A/Leningrad/134/47/57, and A/Ann Arbor/6/60 (H2N2) in Mice. Journal Med. Virol., December 2001, Vol. 65, pages 171-177.</td>
<td>4, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 23-25, 27, 30, 31</td>
</tr>
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**Further documents are listed in the continuation of Box C.**

**See patent family annex.**

- **Special categories of cited documents:**
  - "A" document defining the general state of the art which is not considered to be of particular relevance
  - "E" earlier application or patent published on or after the international filing date
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  - "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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  - "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
  - "S" document member of the same patent family

**Date of the actual completion of the international search**

01 September 2006 (01.09.2006)

**Date of mailing of the international search report**


**Authorized officer**

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