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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: NOVEL VACCINE FORMULATIONS

(57) Abstract: The present invention relates to oil-in-water emulsions, their use as adjuvants, and pharmaceutical, immunologic, or vaccine compositions that may comprise the same. In one embodiment, the oil-in-water (OAV) emulsion may comprise an aqueous solution containing an immunogen, a mineral oil, a non-ionic lipophilic ethoxylated fatty alcohol and a non-ionic hydrophilic surfactant. In another embodiment, the oil-in-water (OAV) emulsion may comprise an aqueous solution containing an immunogen, a non-ionic lipophilic surfactant, a mineral oil and a non-ionic hydrophilic ethoxylated fatty alcohol. The present invention also encompasses a method of making a vaccine composition using the adjuvant of the instant invention, the vaccine composition so obtained and methods of use.



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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2006/013936

A. CLASSIFICATION OF SUBJECT MATTER
 INV. A61K39/02 A61K39/12

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)

A61K

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 practical, search terms used)

EPO-Internal, WPI Data, EMBASE, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 2005/009462 A (MERIAL LIMITED; PARISOT, ALEXIS, GUY, ANDRE; DESGOUILLES-BLECHET, STEP) 3 February 2005 (2005-02-03) page 7, line 9 - page 9, line 31 page 11, lines 3-10 page 12, line 17 - page 13, line 25 page 16, lines 24-29 example 1	1,3, 5-10,13
Y	EP 0 782 846 A (SHISEIDO COMPANY LIMITED) 9 July 1997 (1997-07-09) page 5, lines 42-54 page 6, lines 18-22 table 5	1,3, 5-10,13
A	US 5 250 289 A (BOOTHROYD ET AL) 5 October 1993 (1993-10-05) column 7 - column 8; examples A-E	1-14



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 document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"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

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"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.

"&" document member of the same patent family

Date of the actual completion of the international search

14 September 2006

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2006/013936

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-14(part)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-14 (part)

- an oil-in-water emulsion comprising:
- (1) an aqueous solution containing a vaccine antigen or immunogen,
 - (2) a non-ionic lipophilic ethoxylated fatty alcohol,
 - (3) a mineral oil,
 - (4) a non-ionic hydrophilic ethoxylated fatty alcohol;
-

2. claims: 1, 3, 5-10, 13 (part)

- an oil-in-water emulsion comprising:
- (1) an aqueous solution containing a vaccine antigen or immunogen,
 - (2) a non-ionic lipophilic ethoxylated fatty alcohol,
 - (3) a mineral oil,
 - (4) a non-ionic hydrophilic POE-POP block copolymer;
-

3. claims: 2, 4, 11, 12, 14 (part)

- an oil-in-water emulsion comprising:
- (1) an aqueous solution containing a vaccine antigen or immunogen,
 - (2) a non-ionic lipophilic POE-POP block copolymer,
 - (3) a mineral oil,
 - (4) a non-ionic hydrophilic ethoxylated fatty alcohol;
-

4. claims: 15-20

- an emulsion comprising:
- (1) a non-ionic lipophilic ethoxylated oleyl alcohol,
 - (2) a paraffin oil,
 - (3) a non-ionic hydrophilic ethoxylated oleyl alcohol.
-

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2006/013936

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