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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))
- of inventorship (Rule 4.17(iv))

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))
- with sequence listing part of description (Rule 5.2(a))

(88) Date of publication of the international search report:

24 December 2014

(54) Title: VACCINE COMPOSITION FOR PROPHYLAXIS IN RUMINANTS

(57) Abstract: The invention discloses vaccine compositions against Bluetongue serotype 12 and preparation of vaccine for Bluetongue in suspension cells. Further, the invention relates to a preventive vaccine for Bluetongue disease or infection caused by bluetongue virus serotype 12 (BTV-12) in ruminants. Methods of inactivation of Bluetongue virus are also disclosed.



WO 2014/167582 A3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IN2014/000204

A. CLASSIFICATION OF SUBJECT MATTER
C12N7/06, C12N7/00, A61K39/15, C07K14/14, A61P31/14 Version=2014.01

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)

C12n, A61K, A61P

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)

IPO Database

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X, Y	RAMAKRISHNAN M A ET AL: "Immune Responses and Protective Efficacy of Binary Ethylenimine (BEI)-Inactivated Bluetongue Virus Vaccines in Sheep" VETERINARY RESEARCH COMMUNICATIONS ; AN INTERNATIONAL JOURNAL PUBLISHING TOPICAL REVIEWS AND RESEARCH ARTICLES ON ALL ASPECTS OF THE VETERINARY SCIENCES, KLUWER ACADEMIC PUBLISHERS, DO, vol. 30, no. 8, 1 November 2006 (2006-11-01), pages 873-880, XP019455083 ISSN: 1573-7446 whole document	1, 7-17
X, Y	MATTION N ET AL: "Reintroduction of foot-and-mouth disease in Argentina: characterisation of the isolates and development of tools for the control and eradication of the disease" VACCINE, BUTTERWORTH SCIENTIFIC. GUILDFORD, GB, val. 22, no. 31-32, 22 October 2004 (2004-10-22), pages 4149-4162, XP0045941 08 ISSN: 0264-410X whole document	1, 7-17



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 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

30-10-2014

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/IN2014/000204**Box No. 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.: 2-6
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:
because applicant did not furnish a listing of the sequence in a computer readable form.

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 No. 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:

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 additional fees, this Authority did not invite payment of additional fees.
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.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IN2014/000204

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X, Y	D3-BROWN ET AL; "The Effect of Various Inactivating Agents on the Viral and Ribonucleic Acid Infectivities of Foot-and-Mouth Disease Virus and on its Attachment to Susceptible Cells" J . gen. Microbial. (1963), 31, 179-186 whole document	1, 7-17
X, Y	SAVINI ET AL: "Vaccines against bluetongue in Europe" COMPARATIVE IMMUNOLOGY, MICROBIOLOGY AND INFECTIOUS DISEASES, PERGAMON PRESS, OXFORD, GB, vol. 31, no. 2-3, 1 March 2008 (2008-03-01), pages 101-120, XP0225107991 ISSN: 0147-9571 whole document	1, 7-17
X, Y	- SAVIN I G ET AL: "An inactivated vaccine for the control of bluetongue virus serotype 16 infection in sheep in Italy." VETERINARY MICROBIOLOGY 20 SEP 2007, vol. 124, no. 1-2, 20 September 2007 (2007 -09-20), pages 140-146, XP022190624 ISSN: 0378-1135 whole document	1, 7-17
X, Y	ODEON A C ET AL: "The role of cell-mediated immunity in the pathogenesis of bluetongue virus serotype 11 in the experimental infection of vaccine/sensitized calves." COMPARATIVE IMMUNOLOGY, MICROBIOLOGY AND INFECTIOUS DISEASES JUN 1997, vol. 20, no. 3, June 1997 (1997-06), pages 219-231, XP0025360671 ISSN: 0147-9571 whole document	1, 7-17
X, Y	MARTIN JAVIER ET AL: "Characterization of formaldehyde-inactivated poliovirus preparations made from live-attenuated strains" JOURNAL OF GENERAL VIROLOGY, SOCIETY FOR. GENERAL MICROBIOLOGY, SPENCERS WOOD, GB, vol. 84, no. 7, 1 July 2003 (2003-07- 01), pages 1781-1788, XP0023084231 ISSN: 0022-1317 whole document	1, 7-17
X, Y	HATA ATSUKO ET AL: "Use of an inactivated varicella vaccine in recipients of hematopoietic cell transplants." THE NEW ENGLAND JOURNAL OF MEDICINE 4 JUL 2002, vol. 347, no. 1, 4 July 2002 (2002-07-04), pages 26-34, XP002535905 ISSN: 1533-4406 whole document	1, 7-17
X, Y	NARENDER S. MAAN ET AL; "Identification and Differentiation of the Twenty Six Bluetongue Virus Serotypes by RT-PCR Amplification of the Serotype-Specific Genome Segment 2" PLoS One 2012 28;7(2):e32601 Published: February 28, 2012 whole document	1, 7-17

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/IN2014/000204

Citation	Pub.Date	Family	Pub.Date
WO 2009128043 A1	22-10-2009	US 2011091500 A1	21-04-2011
WO 2009128043 A1	22-10-2009	EP 2280729 A1	09-02-2011
WO 2009065930 A1	28-05-2009	EP 2062594 A1	27-05-2009
WO 2009065930 A1	28-05-2009	US 2011027316 A1	03-02-2011

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IN2014/000204

Continuation of documents considered to be relevant

Category	Citation of documents	Claims
X,Y	WO2009128043A1 (ONDERSTEEPOORT BIOLOGICAL PRODUCTS LTD)22 October 2009(2009-10-22) whole document	1,7-17

X,Y	WO2009065930A1 (DURAN ET AL) 28 May 2009(2009-05-28) whole document	1,7-17
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