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(54) Title: AFFENADENORIRUS (GORILLA) OR ADENOVIRAL VECTORS AND METHODS OF USE

(57) Abstract: The invention provides an adenovirus or adenoviral vector characterized by comprising one or more particular nucleic acid sequences or one or more particular amino acid sequences, or portions thereof, pertaining to, for example, an adenoviral pIX protein, DNA polymerase protein, penton protein, hexon protein, and/or fiber protein.



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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2012/058978

A. CLASSIFICATION OF SUBJECT MATTER
INV. C07K14/005 C12N15/86 C12N7/00
ADD.

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 C07K

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)

EPO-Internal , BIOSIS, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	wo 2010/051367 A1 (UNIV PENNSYLVANIA [US] ; ROY SOUMITRA [US] ; WILSON JAMES M [US] ; VANDEN) 6 May 2010 (2010-05-06) claims ; sequences 1,23 , 38, 60 -----	1-3 , 98-105
A	wo 2011/057248 A2 (GENVEC INC [US] ; GALL JASON [US] ; BROUGH DOUGLAS [US] ; KAHL CHRISTOPH) 12 May 2011 (2011-05-12) the whole document ----- -/-- .	1-3 , 98-105



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

10 April 2013

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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2012/058978

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	D. WEVERS ET AL: "Novel Adenoviruses in wild Primates : a High Level of Genetic Diversity and Evidence of Zoonotic Transmissions", JOURNAL OF VIROLOGY OCT.2011 , vol . 85, no. 20, 10 August 2011 (2011-08-10) , pages 10774-10784, XP055048541 , ISSN: 0022-538X, DOI : 10. 1128/JVI .00810-11 the whole document -----	1
A	WEVERS DIANA ET AL: "A novel adenovirus of Western lowland gorilla (Gorilla gorilla gorilla)", VIROLOGY JOURNAL, BIOMED CENTRAL, LONDON , GB, vol . 7, no. 1, 5 November 2010 (2010-11-05) , page 303 , XP021080233 , ISSN: 1743-422X, DOI : 10. 1186/1743-422X-7-303 the whole document -----	1,2
X	ROY SOUMITRA ET AL: "Isolation and Characterization of Adenoviruses Persistently Shed from the Gastrointestinal Tract of Non-Human Primates", PLOS PATHOGENS, PUBLIC LIBRARY OF SCIENCE, SAN FRANCISCO, CA, US, vol . 5, no. 7, 1 July 2009 (2009-07-01) , pages 1-9 , XP002548489 , ISSN: 1553-7366, DOI : 10. 1371/JOURNAL. PPAT.1000503 the whole document -----	1-3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/058978

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.:
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 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:

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 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.:

2, 3(completely) ; 1, 98-105(partial ly)

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 2, 3(completely) ; 1, 98-105(partially)

An adenovirus or adenoviral vector comprising one or more of the nucleic acid sequences selected from the group consisting of:

- (a) a nucleic acid sequence that is at least 96% identical to SEQ ID NO: 1,
 - (b) a nucleic acid sequence that is at least 99% identical to SEQ ID NO: 2,
 - (c) a nucleic acid sequence that is at least 80% identical to SEQ ID NO: 3,
 - (d) a nucleic acid sequence that is at least 80% identical to SEQ ID NO: 4, and
 - (e) a nucleic acid sequence that is at least 85.4% identical to SEQ ID NO: 5;
- an adenovirus or adenoviral vector comprising the nucleic acid sequence of SEQ ID NO: 1;
a composition comprising said adenovirus or adenoviral vector and a pharmaceutically acceptable carrier.

2. claims: 4, 5(completely) ; 1, 98-105(partially)

An adenovirus or adenoviral vector comprising a nucleic acid sequence that is at least 99% identical to SEQ ID NO: 2 ; a composition comprising said adenovirus or adenoviral vector and a pharmaceutically acceptable carrier.

3. claims: 6, 7(completely) ; 1, 98-105(partially)

An adenovirus or adenoviral vector comprising a nucleic acid sequence that is at least 80% identical to SEQ ID NO: 3 ; a composition comprising said adenovirus or adenoviral vector and a pharmaceutically acceptable carrier.

4. claims: 8, 9(completely) ; 1, 98-105(partially)

An adenovirus or adenoviral vector comprising a nucleic acid sequence that is at least 80% identical to SEQ ID NO: 4 ; a composition comprising said adenovirus or adenoviral vector and a pharmaceutically acceptable carrier.

5. claims: 10, 11(completely) ; 1, 98-105(partially)

An adenovirus or adenoviral vector comprising a nucleic acid sequence that is at least 85.4% identical to SEQ ID NO: 5; a composition comprising said adenovirus or adenoviral vector and a pharmaceutically acceptable carrier.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

6. claims: 12-41(completely) ; 98-105(partial ly)

An adenovirus or adenoviral vector comprising one or more of the nucleic acid sequences selected from the group consisting of:

- (a) a nucleic acid sequence that is at least 98.7% identical to SEQ ID NO: 6,
 - (b) a nucleic acid sequence that is at least 98.9% identical to SEQ ID NO: 7,
 - (c) a nucleic acid sequence that is at least 99.4% identical to SEQ ID NO: 8,
 - (d) a nucleic acid sequence that is at least 99.1 % identical to SEQ ID NO: 9,
 - (e) a nucleic acid sequence that is at least 81.25% identical to SEQ ID NO: 10,
 - (f) a nucleic acid sequence that is at least 90.83% identical to SEQ ID NO: 11, and
 - (g) a nucleic acid sequence that is at least 82.5% identical to SEQ ID NO: 12;
- a composition comprising said adenovirus or adenoviral vector and a pharmaceutically acceptable carrier.

7. claims: 42-48, 52-57 (completely) ; 49, 98-105 (partial ly)

An adenovirus or adenoviral vector comprising one or more of the amino acid sequences selected from the group consisting of:

- (a) an amino acid sequence that is at least 85% identical to SEQ ID NO: 14,
 - (b) an amino acid sequence that is at least 80% identical to SEQ ID NO: 15, and
 - (c) an amino acid sequence that is at least 80% identical to SEQ ID NO: 16;
- a composition comprising said adenovirus or adenoviral vector and a pharmaceutically acceptable carrier.

8. claims: 50, 51(completely) ; 49, 98-105(partial ly)

An adenovirus or adenoviral vector, which comprises a nucleic acid sequence encoding an amino acid sequence that is at least 99.7% identical to SEQ ID NO: 13; a composition comprising said adenovirus or adenoviral vector and a pharmaceutically acceptable carrier.

9. claims: 58-66, 68, 69, 72-86, 88, 89, 92-97(completely) ; 67, 87, 98-105(partial ly)

An adenovirus or adenoviral vector comprising one or more of the amino acid sequences selected from the group consisting of:

- (a) an amino acid sequence that is at least 99% identical to

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

SEQ ID NO: 18,
 (b) an amino acid sequence that is at least 81.4% identical to SEQ ID NO: 20,
 (c) an amino acid sequence that is at least 91.3% identical to SEQ ID NO: 21, and
 (d) an amino acid sequence that is at least 83.4% identical to SEQ ID NO: 22;
 an adenovirus or adenoviral vector comprising one or more of the nucleic acid sequences selected from the group consisting of:
 (a) a nucleic acid sequence encoding an amino acid sequence comprising at least 89 contiguous amino acid residues of SEQ ID NO: 18,
 (c) a nucleic acid sequence encoding an amino acid sequence comprising at least 114 contiguous amino acid residues of SEQ ID NO: 20,
 (d) a nucleic acid sequence encoding an amino acid sequence comprising at least 231 contiguous amino acid residues of SEQ ID NO: 21, and
 (e) a nucleic acid sequence encoding an amino acid sequence comprising at least 30 contiguous amino acid residues of SEQ ID NO: 22;
 a composition comprising said adenovirus or adenoviral vector and a pharmaceutically acceptable carrier.

10. claims: 70, 71, 90, 91(completely) ; 67, 87, 98-105(partially)

An adenovirus or adenoviral vector comprising a nucleic acid sequence encoding an amino acid sequence that is at least 99.75% identical to SEQ ID NO: 19; an adenovirus or adenoviral vector comprising a nucleic acid sequence encoding an amino acid sequence comprising at least 428 contiguous amino acid residues of SEQ ID NO: 19; a composition comprising said adenovirus or adenoviral vector and a pharmaceutically acceptable carrier.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2012/058978

Patent document cited in search report			Publication date		Patent family member(s)		Publication date	
wo	2010051367	AI	06-05-2010	EP	2350269	AI	03-08-2011	
				JP	2012507296	A	29-03-2012	
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				Wo	2010051367	AI	06-05-2010	

wo	2011057248	A2	12-05-2011	AU	2010314842	AI	31-05-2012	
				CA	2779632	AI	12-05-2011	
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				EA	201270607	AI	28-09-2012	
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