

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
5 July 2001 (05.07.2001)

PCT

(10) International Publication Number  
WO 01/48155 A3

- (51) International Patent Classification<sup>7</sup>: C12N 7/02 (74) Agent: LAZAR, Steven, R.: Genzyme Corporation, Legal Department, One Kendall Square, Cambridge, MA 02139 (US).
- (21) International Application Number: PCT/US00/34953
- (22) International Filing Date: 20 December 2000 (20.12.2000) (81) Designated States (*national*): AU, CA, JP.
- (25) Filing Language: English (84) Designated States (*regional*): European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR).
- (26) Publication Language: English
- (30) Priority Data: 60/173,584 29 December 1999 (29.12.1999) US — with international search report
- (71) Applicant: GENZYME CORPORATION [US/US]; One Kendall Square, Cambridge, MA 02139 (US). (88) Date of publication of the international search report: 3 January 2002
- (72) Inventors: MCNEILLY, David, S.: 101 Boardman Street, Norfolk, MA 02056 (US). OSBURN, William, O.: 5 Ascot Street, Apt. 3, Brighton, MA 02135 (US). *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.*



WO 01/48155 A3

(54) Title: METHOD USING FILTRATION AIDS FOR THE SEPARATION OF VIRUS VECTORS FROM NUCLEIC ACIDS AND OTHER CELLULAR CONTAMINANTS

(57) Abstract: Methods are disclosed for the purification of encapsulated viruses. The methods are advantageous in that they employ filtration aids, together with low concentrations of metal ions, in place of nucleases for purification. This provides important advantages for commercial scale purification of viruses.

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/34953

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 C12N7/02

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)

IPC 7 C12N

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)

WPI Data, PAJ, EPO-Internal, MEDLINE, BIOSIS, EMBASE, CHEM ABS 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 98 22588 A (INTROGEN THERAPEUTICS INC ;CHO TOOHYON (US); ZHANG SHUYUAN (US); T) 28 May 1998 (1998-05-28) see whole doc., esp. p.35, l.25f, exp. 1, page 74 and claims ---	1
A	US 3 214 369 A (SAMUEL P. FELIX) 26 October 1965 (1965-10-26) ---	
A	US 5 075 430 A (LITTLE MICHAEL C) 24 December 1991 (1991-12-24) see whole doc., esp. claims and col.2, l.3-7 ---	
	-/--	

Further documents are listed in the continuation of box C.

Patent family members are listed in 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.
- \*Z\* document member of the same patent family

Date of the actual completion of the international search  <p style="text-align: center;">3 August 2001</p>	Date of mailing of the international search report  <p style="text-align: center;">10/08/2001</p>
---	---

Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer  <p style="text-align: center;">Mueller, F</p>
--	---

**INTERNATIONAL SEARCH REPORT**

International Application No  
PCT/US 00/34953

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>HARUNA I ET AL: "SEPARATION OF ADENOVIRUS BY CHROMATOGRAPHY ON DEAE-CELLULOSE" VIROLOGY,US,RAVEN PRESS, NEW YORK, NY, vol. 13, 1961, pages 264-267, XP000601693 ISSN: 0042-6822 the whole document</p> <p align="center">---</p>	
A	<p>ZOLOTUKHIN ET AL: "Recombinant adeno-associated virus purification using novel methods improves infectious titer and yield" GENE THERAPY,GB,MACMILLAN PRESS LTD., BASINGSTOKE, vol. 6, no. 6, June 1999 (1999-06), pages 973-985, XP002116593 ISSN: 0969-7128</p> <p align="center">-----</p>	

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 00/34953

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9822588 A	28-05-1998	AU 732703 B	26-04-2001
		AU 5361798 A	10-06-1998
		CN 1244215 A	09-02-2000
		EP 0968284 A	05-01-2000
		NO 992389 A	19-07-1999
		US 6194191 B	27-02-2001
-----			
US 3214369 A	26-10-1965	NONE	
-----			
US 5075430 A	24-12-1991	NONE	
-----			