



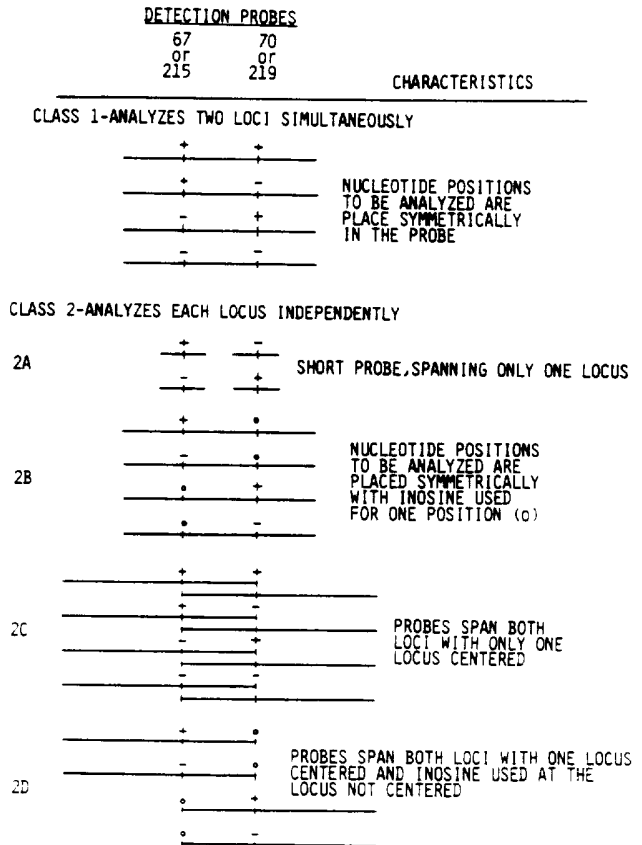
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification ⁵ : C12Q 1/70, 1/68</p>	<p>A3</p>	<p>(11) International Publication Number: WO 92/16180</p> <p>(43) International Publication Date: 1 October 1992 (01.10.92)</p>						
<p>(21) International Application Number: PCT/US92/02037</p> <p>(22) International Filing Date: 12 March 1992 (12.03.92)</p> <p>(30) Priority data:</p> <table style="width:100%; border: none;"> <tr> <td style="width:30%;">668,549</td> <td style="width:40%;">13 March 1991 (13.03.91)</td> <td style="width:30%;">US</td> </tr> <tr> <td>754,146</td> <td>3 September 1991 (03.09.91)</td> <td>US</td> </tr> </table> <p>(60) Parent Application or Grant</p> <p>(63) Related by Continuation US 754,146 (CON) Filed on 3 September 1991 (03.09.91)</p> <p>(71) Applicants (for all designated States except US): SISKA DIAGNOSTICS, INC. [US/US]; 505 Coast Boulevard South, La Jolla, CA 92037 (US). THE REGENTS OF THE UNIVERSITY OF CALIFORNIA [US/US]; 300 Lakeside Drive, 22nd Floor, Oakland, CA 94612-3550 (US).</p>	668,549	13 March 1991 (13.03.91)	US	754,146	3 September 1991 (03.09.91)	US	<p>(72) Inventors; and (75) Inventors/Applicants (for US only): GINGERAS, Thomas, Raymond [US/US]; 1528 Juniper Hill Drive, Encinitas, CA 92024 (US). BARRINGER, Kevin, J. [US/US]; 7988 Montara Avenue, San Diego, CA 92126 (US). RICHMAN, Douglas, D. [US/US]; 9551 La Jolla Farms Road, La Jolla, CA 92037 (US). PRODANOVICH, Patricia, C. [US/US]; 5638 Gaines Street, San Diego, CA 92110 (US). DAVIS, Geneva, Ruth [US/US]; 3083 East Fox Run Way, San Diego, CA 92111 (US).</p> <p>(74) Agents: WATT, Phillip, H. et al.; Fitch, Even, Tabin & Flannery, Room 900, 135 South LaSalle Street, Chicago, IL 60603 (US).</p> <p>(81) Designated States: AT (European patent), AU, BE (European patent), CA, CH (European patent), DE (European patent), DK (European patent), ES (European patent), FR (European patent), GB (European patent), GR (European patent), IT (European patent), JP, LU (European patent), MC (European patent), NL (European patent), SE (European patent), US.</p> <p>Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p> <p>(88) Date of publication of the international search report: 29 October 1992 (29.10.92)</p>	
668,549	13 March 1991 (13.03.91)	US						
754,146	3 September 1991 (03.09.91)	US						

(54) Title: DETECTION OF 3'-AZIDO-3'-DEOXYTHYMIDINE RESISTANCE

(57) Abstract

An assay for detecting the genotype of mutant and wild-type alleles at multiple loci associated with resistance to the drug AZT utilizes a series of probes which anneal to an amplified region of the HIV-1 pol gene. The assay format which involves amplification of a rare nucleic acid followed by capture on a solid phase, and detection of the captured sequences by a labelled probe, is applicable to assays for resistance to other drugs involving point mutations.



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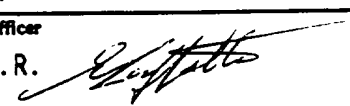
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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 92/02037

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) ⁶		
According to International Patent Classification (IPC) or to both National Classification and IPC Int.Cl. 5 C12Q1/70; C12Q1/68		
II. FIELDS SEARCHED		
Minimum Documentation Searched ⁷		
Classification System	Classification Symbols	
Int.Cl. 5	C12Q	
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched ⁸		
III. DOCUMENTS CONSIDERED TO BE RELEVANT⁹		
Category ^o	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³
X	WORLD PATENTS INDEX LATEST Week 1491, 22 May 1991 Derwent Publications Ltd., London, GB; AN 91-094596 & AU,A,9 060 828 (WELLCOME FOUNDATION LTD) 14 February 1991	4,6
Y	see abstract	1,5
L	---	
	EP,A,0 422 762 (THE WELLCOME FOUNDATION LIMITED) 17 April 1991 (Document published after the priority date of the present application and corresponding to the australian document of the preceding citation) ---	
	-/--	
<p>^o Special categories of cited documents :¹⁰</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"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</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"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.</p> <p>"A" document member of the same patent family</p>		
IV. CERTIFICATION		
Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report	
24 AUGUST 1992	17. 09. 92	
International Searching Authority	Signature of Authorized Officer	
EUROPEAN PATENT OFFICE	LUZZATTO E. R. 	

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III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)		
Category °	Citation of Document, with indication, where appropriate, of the relevant passages	Relevant to Claim No.
Y	<p>PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF USA. vol. 87, March 1990, WASHINGTON US pages 1874 - 1878; J.C.GUATELLI ET AL.: 'Isothermal, in vitro amplification of nucleic acids by a multienzyme reaction modeled after retroviral replication' cited in the application see the whole document</p> <p style="text-align: center;">---</p>	1,5
A	<p>AIDS vol. 5, no. 2, February 1991, pages 137 - 144; B.A.LARDER ET AL.: 'Zidovudine resistance by direct detection of mutations in DNA from HIV-infected lymphocytes' see the whole document</p> <p style="text-align: center;">---</p>	1,4
A	<p>SCIENCE. vol. 246, 1 December 1989, LANCASTER, PA US pages 1155 - 1158; B.A.LARDER ET AL.: 'Multiple mutations in HIV-1 reverse transcriptase confer high-level resistance to zidovudine (AZT)' see the whole document</p> <p style="text-align: center;">---</p>	1
P,X	<p>WO,A,9 113 075 (ORION.YHTYMÄ OY) 5 September 1991</p> <p style="text-align: center;">---</p>	4,6
Y	<p>see page 4, line 6 - line 15 see page 6, line 1 - page 7, line 30; claims 18,30,44; example 10</p> <p style="text-align: center;">---</p>	1,5
P,X	<p>WO,A,9 110 746 (CHIRON CORPORATION) 25 July 1991 see claims 74,75,98,99,104; example 9; table 3</p> <p style="text-align: center;">---</p>	6
P,X	<p>THE JOURNAL OF INFECTIOUS DISEASES vol. 164, no. 6, December 1991, CHICAGO, USA pages 1075 - 1081; D.R.RICHMANN ET AL.: 'Detection of mutations associated with Zidovudine resistance in human immunodeficiency virus by use of the polymerase chain reaction' see the whole document</p> <p style="text-align: center;">---</p>	4,6
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III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)		
Category °	Citation of Document, with indication, where appropriate, of the relevant passages	Relevant to Claim No.
P, X	<p>THE JOURNAL OF INFECTIOUS DISEASES vol. 164, no. 6, December 1991, CHICAGO, USA pages 1066 - 1074; T.R.GINGERAS ET AL.: 'Use of self-sustained sequence replication amplification reaction to analyze and detect mutations in zidovudine-resistant human immunodeficiency virus' see the whole document</p> <p style="text-align: center;">---</p>	1-6

**ANNEX TO THE INTERNATIONAL SEARCH REPORT
ON INTERNATIONAL PATENT APPLICATION NO. US 9202037
SA 59190**

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report. The members are as contained in the European Patent Office EDP file on
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP-A-0422762	17-04-91	AU-A- 6082890 JP-A- 3133400	14-02-91 06-06-91
WO-A-9113075	05-09-91	AU-A- 7235191	18-09-91
WO-A-9110746	25-07-91	None	

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82