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- (71) Applicant (for all designated States except US): AFFYMETRIX, INC. [US/US]; 3380 Central Expressway, Santa Clara, CA 95051 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): HUANG, Xiaohua [US/US]; 937 Jackson Street, Mountain View, CA 94043 (US). RYDER, Tom [US/US]; 100 Spring Street, Los Gatos, CA 95030 (US). KAPLAN, Paul [US/US]; 2190 Vizcaya Circle, Campbell, CA 95008 (US).
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(54) Title: IDENTIFICATION OF ALLELES

(57) Abstract: A method for determining the genotype of one or more individuals at a polymorphic locus employs amplification of a region of DNA using primers containing tags and hybridization of the products to one or more probes on a solid support. The genotype or ratio of alleles is identified from the pattern of hybridization. The method can also be used to determine the frequency of different alleles in a population.

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C12Q1/68

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)
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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, PAJ, BIOSIS, CHEM ABS Data, MEDLINE, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 93 25563 A (HOPE CITY ;WALLACE ROBERT BRUCE (US)) 23 December 1993 (1993-12-23) page 7 -page 9; claims 1-4 ---	1-22
X	WO 99 29901 A (AUSUBEL FREDERICK M ;GEN HOSPITAL CORP (US); MINDRINOS MICHAEL (US) 17 June 1999 (1999-06-17) page 5, line 25 -page 6, line 22 page 27, line 18 -page 29, line 10 claims 1-20 ---	1-22
X	US 5 525 494 A (NEWTON CLIVE R) 11 June 1996 (1996-06-11) column 1, line 42 -column 2, line 21 column 3, line 29 - line 61 column 4, line 32 - line 57 claims 1-15 --- -/--	1-22

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	*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
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O document referring to an oral disclosure, use, exhibition or other means	*Z* document member of the same patent family
P document published prior to the international filing date but later than the priority date claimed	

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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 Gabriels, J
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>UGOZZOLI LUIS ET AL: "Detection of specific alleles by using allele-specific primer extension followed by capture on solid support." GENETIC ANALYSIS TECHNIQUES AND APPLICATIONS, vol. 9, no. 4, 1992, pages 107-112, XP002917078 ISSN: 1050-3862 the whole document</p> <p style="text-align: center;">---</p>	1-22
P, X	<p>WO 00 47766 A (GIBSON NEIL JAMES ;FOY CAROLE ANN (GB); ASTRAZENECA UK LTD (GB); H) 17 August 2000 (2000-08-17) claims 1-9</p> <p style="text-align: center;">-----</p>	1-22

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 00/26298

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9325563 A	23-12-1993	CA 2115342 A	23-12-1993
		AU 674127 B	12-12-1996
		AU 2251192 A	04-01-1994
		EP 0607151 A	27-07-1994
		JP 6509946 T	10-11-1994
		US 5981176 A	09-11-1999
WO 9929901 A	17-06-1999	NONE	
US 5525494 A	11-06-1996	AT 144290 T	15-11-1996
		AU 622349 B	02-04-1992
		AU 6118490 A	14-03-1991
		DE 69028891 D	21-11-1996
		DE 69028891 T	13-03-1997
		EP 0416817 A	13-03-1991
		GB 2235689 A, B	13-03-1991
		JP 3272686 A	04-12-1991
		NZ 235015 A	26-03-1992
WO 0047766 A	17-08-2000	AU 2447100 A	29-08-2000