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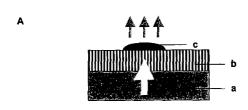
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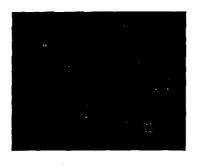
#### (54) Title: HIGH THROUGHPUT CELLULAR RESPONSE ASSAY USING MICROARRAYS





(57) Abstract: The present invention relates to methods for screening of cellular responses of cellular components comprising:(a) providing cellular components on the surface of a substrate, said substrate having immobilized thereon an array of detector molecules;(b) delivering test compounds to positions on the substrate corresponding to the arrayed detector molecules on the surface of said solid substrate;(c) incubating said test compounds with said cellular components on the surface of the solid support, under conditions allowing the induction of cellular responses;(d) assaying said cellular responses; and,identifying and characterizing the cellular responses induced by said test compounds. The present invention further relates to the uses of said methods as well as microarrays and kits for carrying out said methods.

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A. CLASSIFICATION OF SUBJECT MATTER IPC 7 G01N33/50 G01N33/68 G01N33/551 B01J19/00 C12Q1/68 G01N33/569

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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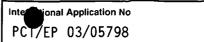
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS, PAJ, WPI Data, MEDLINE, COMPENDEX, INSPEC

Category °	Citation of document, with indication, where appropriate, of	Relevant to claim No.		
X	US 6 197 575 B1 (TANNENBAUM S 6 March 2001 (2001-03-06) the whole document	1-3,5, 9-19, 22-32, 34,35		
	column 36, line 12 -column 37 examples 7,8,10	, line 42		
Y			1-35	
Х	WO 00 63701 A (UNIV LELAND ST; BROWN PATRICK (US); HAAB BRI 26 October 2000 (2000-10-26)		28-32	
Y	the whole document 	-/	1–35	
X Furti	ner documents are listed in the continuation of box C.	Patent family members are I	isted in annex.	
"A" docume consid "E" earlier of filing d "L" docume which citation "O" docume other r "P" docume	ent which may throw doubts on priority claim(s) or is cited to establish the publication date of another n or other special reason (as specified) ent referring to an oral disclosure, use, exhibition or	or priority date and not in conflict cited to understand the principle invention  "X" document of particular relevance; cannot be considered novel or convention involve an inventive step when the particular relevance; cannot be considered to involve document is combined with one ments, such combination being on the art.	"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	
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Name and r	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,	Authorized officer  Tuynman, A		

### INTERNATIONAL SEARCH REPORT



C/Continu	ntion) DOCUMENTS CONSIDERED TO BE RELEVANT	101/EF 03/03/96
Category °	ation) DOCUMENTS CONSIDERED TO BE RELEVANT  Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	TOBERY TIMOTHY W ET AL: "A simple and efficient method for the monitoring of antigen-specific T cell responses using peptide pool arrays in a modified ELISpot assay"  JOURNAL OF IMMUNOLOGICAL METHODS, vol. 254, no. 1-2, 1 August 2001 (2001-08-01), pages 59-66, XP004245442 ISSN: 0022-1759 the whole document	1,7, 14-17, 23,25, 27-32,35
Y	US 6 103 479 A (TAYLOR D LANSING) 15 August 2000 (2000-08-15) the whole document	1-35
Υ	WO 00 31304 A (PERKIN ELMER CORP) 2 June 2000 (2000-06-02) the whole document	1-15, 18-25, 28-35
A	LIN HSINGCHI J ET AL: "Cholera toxin-induced modulation of gene expression: Elucidation via cDNA microarray for rational cell-based sensor design."  ANALYTICA CHIMICA ACTA, vol. 457, no. 1, 2002, pages 97-108, XP002219747 15 April, 2002 ISSN: 0003-2670 the whole document	1-35

# INTERNATIONAL SEARCH REPORT

Intermional Application No PC1/EP 03/05798

						00/00/00
	atent document d in search report		Publication date		Patent family member(s)	Publication date
US	6197575	B1	06-03-2001	AT CA DE DE EP WO	227338 T 2324208 A1 69903800 D1 69903800 T2 1064353 A2 9947922 A2	15-11-2002 23-09-1999 12-12-2002 02-10-2003 03-01-2001 23-09-1999
WO	0063701	Α	26-10-2000	CA EP JP WO	2366123 A1 1169649 A2 2002542487 T 0063701 A2	26-10-2000 09-01-2002 10-12-2002 26-10-2000
US	6103479	A	15-08-2000	US AU CA EP JP US US US US AU EP JP WO	5989835 A 730100 B2 6667898 A 2282658 C 2410688 A1 0983498 A1 2000509827 T 2002355090 A 9838490 A1 6548263 B1 2003096322 A1 6620591 B1 6416959 B1 6573039 B1 734704 B2 3297197 A 0912892 A1 2000512009 T 9745730 A1	23-11-1999 22-02-2001 18-09-1998 25-02-2003 03-09-1998 08-03-2000 02-08-2000 10-12-2002 03-09-1998 15-04-2003 22-05-2003 16-09-2003 09-07-2002 03-06-2003 21-06-2001 05-01-1998 06-05-1999 12-09-2000 04-12-1997
WO	0031304	A	02-06-2000	US AU CA EP JP WO	6638760 B1 2028300 A 2350756 A1 1133574 A1 2002531074 T 0031304 A1	28-10-2003 13-06-2000 02-06-2000 19-09-2001 24-09-2002 02-06-2000