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INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP 99/01392

A. CLASSIFICATION OF SUBJECT MATTER IPC 6 C12Q1/70		
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 6 C12Q		
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)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CHEUNG ET AL.: "DETECTION OF VIRAL SEQUENCES BY INTERNALLY CALIBRATED GENE AMPLIFICATION" BIOTECHNIQUES, vol. 14, no. 5, 1993, pages 785-789, XP002076373	1, 10, 11, 15, 16
Y	the whole document	2-4, 7-9, 12, 13
X	WO 93 23569 A (RIBOZYME PHARM INC) 25 November 1993 (1993-11-25)	10, 11, 14
Y	See EBV target sequence 18, 19 and 21. the whole document	1, 2, 8, 9, 12, 13, 15, 16
	-/-	
<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C.		
<input checked="" type="checkbox"/> 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. "&" document member of the same patent family
Date of the actual completion of the International search 25 February 2000		Date of mailing of the International search report 16 MARCH 2000
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 Hagenmaier, S

INTERNATIONAL SEARCH REPORT

Int. l. Application No

PCT/EP 99/01392

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 97 37669 A (UNIV MASSACHUSETTS) 16 October 1997 (1997-10-16)	10, 11, 14
Y	See BNLFI specific antisense oligonucleotides N3, N5 and N7, claim 23, pages 58-59; antisense oligonucleotide TP7, claim 29, page 61.	1, 2, 8, 9, 12, 13, 15, 16
X	----- PATENT ABSTRACTS OF JAPAN vol. 018, no. 114 (C-1171), 24 February 1994 (1994-02-24) & JP 05 309000 A (IATRON LAB INC), 22 November 1993 (1993-11-22)	10, 11, 14
Y	See probes for with ID/AC E05922, Q54747, E05923, E05928. abstract	1, 2, 8, 9, 12, 13, 15, 16
X	----- WO 93 07882 A (ISIS PHARMACEUTICALS INC) 29 April 1993 (1993-04-29)	10, 11
Y	See claim 1, pages 20-21, antisense oligomer targeting BMRF1 and antisense oligomer targeting EBER-1. the whole document	1-5, 7-9, 12-16
X	----- WO 98 04746 A (SINAI SCHOOL MEDICINE) 5 February 1998 (1998-02-05)	10, 11
Y	See example 11, page 80, probes (AC/ID: V22786 and V22787).	1, 2, 8, 9, 12, 13, 15, 16
Y	----- KIEVITS T ET AL: "NASBA TM ISOTHERMAL ENZYMATIC IN VITRO NUCLEIC ACID AMPLIFICATION OPTIMIZED FOR THE DIAGNOSIS OF HIV-1 INFECTION" JOURNAL OF VIROLOGICAL METHODS, vol. 35, no. 3, 1 December 1991 (1991-12-01), pages 273-286, XP000576430 the whole document	1-16
Y	----- WO 97 32036 A (AKZO NOBEL NV ;OVYN CAROLINE LOUISE LUCIENNE (BE); GEMEN BOB VAN () 4 September 1997 (1997-09-04) the whole document	1-16
Y	----- EP 0 628 568 A (BOEHRINGER MANNHEIM GMBH) 14 December 1994 (1994-12-14) See example 3, pages 11-12. the whole document	1-16
Y	----- DATABASE NCBI 'Online! Accession: NC 001345, 1983 "HUMAN HERPESVIRUS 4 GENOME" XP002131606 abstract	1-16
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INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 99/01392

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	ZHANG ET AL.: "TRANSCRIPTIONAL EXPRESSION OF THE VIRAL GENOME IN THE EPSTEIN-BARR VIRUS-INDUCED TAMARIN LYMPHOMA AND THE CORRESPONDING LYMPHOBLASTOID TUMOUR LINES" VIRUS RESEARCH, vol. 26, 1992, pages 153-166, XP000877165 See TABLE 2 the whole document	1-16
Y	TIERNEY ET AL.: "EPSTEIN-BARR VIRUS LATENCY IN BLOOD MONONUCLEAR CELLS: ANALYSIS OF VIRAL GENE TRANSCRIPTION DURING PRIMARY INFECTION AND IN THE CARRIER STATE" JOURNAL OF VIROLOGY, vol. 68, no. 11, November 1994 (1994-11), pages 7374-7385, XP002118061 the whole document	1-4,7-16
Y	BROOKS ET AL.: "EPSTEIN-BARR VIRUS LATENT GENE TRANSCRIPTION IN NASOPHARYNGEAL CARCINOMA CELLS: COEXPRESSION OF EBNA1, LMP1, AND LMP2 TRANSCRIPTS" JOURNAL OF VIROLOGY, vol. 66, no. 5, 1992, pages 2689-2697, XP002118062 the whole document	1-4,7-16
Y	BRINK ET AL.: "MULTIPRIMED cDNA SYNTHESIS FOLLOWED BY PCR IS THE MOST SUITABLE METHOD FOR EPSTEIN-BARR VIRUS TRANSCRIPT ANALYSIS IN SMALL LYMPHOMA BIOPSIES" MOL. CELL. PROBES, vol. 11, 1997, pages 39-47, XP002131581 the whole document	1-4,7-16
Y	WEI ET AL.: "EXPRESSION AND TUMORIGENICITY OF THE EPSTEIN-BARR VIRUS BARF1 GENE IN HUMAN LOUCKES B-LYMPHOCYTE CELL LINE" CANCER RESEARCH, vol. 54, 1994, pages 1843-1848, XP002131583 the whole document	1,2,5, 7-16
Y	TOUITOU ET AL.: "TRANSCRIPTIONAL ANALYSIS OF THE EPSTEIN-BARR VIRUS INTERLEUKIN-10 HOMOLOGUE DURING THE LYTIC CYCLE" J. GEN. VIROL., vol. 77, 1996, pages 1163-1168, XP002131582 the whole document	1,2,6, 8-16
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INTERNATIONAL SEARCH REPORT

In. tional Application No

PCT/EP 99/01392

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	LABRECQUE ET AL.: "EPSTEIN-BARR VIRUS IN EPITHELIAL CELL TUMORS: A BREAST CANCER STUDY" CANCER RESEARCH, vol. 55, 1995, pages 39-45, XP002131605 the whole document	1,2,8-16
A	EP 0 574 048 A (AKZO NV) 15 December 1993 (1993-12-15) the whole document	
A	WO 93 11267 A (CANCER RES INST) 10 June 1993 (1993-06-10) the whole document	
A	DE 196 27 932 A (BOEHRINGER MANNHEIM GMBH) 15 January 1998 (1998-01-15) the whole document	
A	WO 95 03415 A (WOLF HANS JOACHIM ;REISCHL UDO (DE); MOTZ MANFRED (DE)) 2 February 1995 (1995-02-02) the whole document	
A	EP 0 316 170 A (GENE GALWAY LIMITED G) 17 May 1989 (1989-05-17) the whole document	
P,X	BRINK ET AL.: "NUCLEIC ACID SEQUENCE-BASED AMPLIFICATION, A NEW METHOD FOR ANALYSIS OF SPLICED AND UNSPLICED EPSTEIN-BARR VIRUS LATENT TRANSCRIPTS, AND ITS COMPARISON WITH REVERSE TRANSCRIPTASE" JOURNAL OF CLINICAL MICROBIOLOGY, vol. 36, no. 11, November 1998 (1998-11), pages 3164-169, XP002118063 the whole document	1-5,7-16
T	HAYES ET AL.: "EXPRESSION OF EPSTEIN-BARR VIRUS (EBV) TRANSCRIPTS ENCODING HOMOLOGUES TO IMPORTANT HUMAN PROTEINS IN DIVERSE EBV ASSOCIATED DISEASES" MOLECULAR PATHOLOGY, vol. 52, no. 2, April 1999 (1999-04), pages 97-103, XP000877178 the whole document	1,2,6, 8-16

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP 99/01392

Box I Observations where certain claims were found unsearchable (Continuation of item 1 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 II Observations where unity of invention is lacking (Continuation of item 2 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 fee, this Authority did not invite payment of any additional fee.
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.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- 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: 1-4,7-16 (all partially)

Oligonucleotides with Seq.IDs 1-5 corresponding to the sequence of the BKRF1 reading frame spanning nucleotides 107950-109872 of EBNA-1, wherein Seq.ID 3 can be provided with a T7-polymerase sequence, methods using said oligonucleotides for the detection of EBV, as well as a test kit comprising these oligonucleotides.

2. Claims: 1,2,8-16 (all partially)

Oligonucleotides with Seq.IDs 6-11 corresponding to the sequence of the reading frame spanning nucleotides 6629-6795 of EBER-1, wherein Seq.ID 6 can be provided with a T7-polymerase sequence, methods using said oligonucleotides for the detection of EBV, as well as a test kit comprising these oligonucleotides.

3. Claims: 1,2,8-16 (all partially)

Oligonucleotides with Seq.IDs 12-16 corresponding to the sequence of the BNLF1 reading frame spanning nucleotides 169474-169207 of LMP-1, wherein Seq.ID 12 can be provided with a T7-polymerase sequence, methods using said oligonucleotides for the detection of EBV, as well as a test kit comprising these oligonucleotides.

4. Claims: 1-4,7-16 (all partially)

Oligonucleotides with Seq.IDs 17-21 corresponding to the sequence of the exons 2,3,4,5,6,7 and 8 of LMP-2, wherein Seq.ID 19 can be provided with a T7-polymerase sequence, methods using said oligonucleotides for the detection of EBV, as well as a test kit comprising these oligonucleotides.

5. Claims: 1,2,6-10 (all partially)

Oligonucleotides with Seq.IDs 27-31 corresponding to the sequence of the BCRF1 reading frame spanning nucleotides 8675-10184 of vIL10, wherein Seq.ID 30 can be provided with a T7-polymerase sequence, methods using said oligonucleotides for the detection of EBV, as well as a test kit comprising these oligonucleotides.

6. Claims: 1,2,5,7-16 (all partially)

Oligonucleotides with Seq.IDs 22-26 corresponding to the

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

sequence of the BARF1 reading frame spanning nucleotides 165504-166166, wherein Seq.ID 24 can be provided with a T7-polymerase sequence, methods using said oligonucleotides for the detection of EBV, as well as a test kit comprising these oligonucleotides.

7. Claims: 1,2,6-16 (all partially)

Oligonucleotides with Seq.IDs 32-36 corresponding to the sequence of the BDLF2 reading frame spanning nucleotides 132389-131130, wherein Seq.ID 32 can be provided with a T7-polymerase sequence, methods using said oligonucleotides for the detection of EBV, as well as a test kit comprising these oligonucleotides.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 99/01392

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 99/01392

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