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(81) **Designated States** *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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Published:

— *with international search report (Art. 21(3))*

(88) **Date of publication of the international search report**:
15 October 2009

(15) **Information about Correction**:

Previous Correction:
see Notice of 11 June 2009

(54) **Title**: DETECTION OF EPSTEIN-BARR VIRUS (EBV) IN NASOPHARYNGEAL CANCER

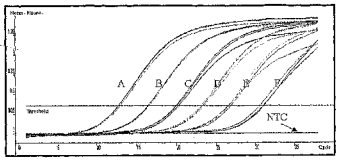

Figure 1(A) Representative real time PCR cycling profiles of LMP1 from the p-TOPO LMP1 plasmid DNA with starting EBV DNA ranging from 74.8 to 7480000 copies. A triplicate for each concentration was carried out for the inter-assays variability tests and duplicates for the quantification of LMP1 in NPC plasma and normal samples.
Legend:
A- 7.48 x 10^6 copies of EBV DNA
B- 7.48 x 10^5 copies of EBV DNA
C- 7.48 x 10^4 copies of EBV DNA
D- 7.48 x 10^3 copies of EBV DNA
E- 7.48 x 10^2 copies of EBV DNA
F- 7.48 x 10^1 copies of EBV DNA
NTC- No template control

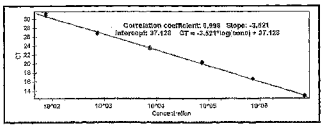

Figure 1 (B) Representative standard curve for LMP1 PCR generated from six serial dilutions of the p-TOPO LMP1 standard against their respective threshold value (Ct).

(57) **Abstract**: The present invention relates to a pair of new oligonucleotides primers, having a specific nucleic acid sequence, usable for simply and rapidly amplifying Epstein-Barr virus (EBV) and useful for diagnosing, etc., diseases caused by the viruses.

WO 2009/054713 A3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/MY2008/000101

A. CLASSIFICATION OF SUBJECT MATTER

C12N 15/33(2006.01)i, C12N 15/10(2006.01)i

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 C12N 15/33, C12N 15/10

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean Utility models and applications for Utility models since 1975
Japanese Utility models and applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS(KIPO internal), PubMed, DELPHION, "EBV, LMP-1, PCR and similar terms"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FU CHEN et al.'Coupled transcription of Epstein-Barr virus latent membrane protein(LMP-1) and LMP-2B genes in nasopharyngeal carcinomas.'JOURNAL OF GENERAL VIROLOGY. 1995, vol.76, pp.131-138. See abstract & methods.	1-17
X	SHINN-YU LIN et al.'Presence of Epstein-Barr virus latent membrane protein 1 gene in the nasopharyngeal swabs from patients with nasopharyngel carcinoma.' HEAD & NECK. 2001, vol.23, pp.194-200. See abstract & methods.	1-17
X	YUN WANG et al.'Carboxyl-terminal sequence variation of latent membrane protein 1 gene in Epstein-Barr virus-associated gastric carcinomas from eastern china and japan.' INTERVIROLOGY. March 14, 2007, vol.50, pp.229-236. See abstract & methods.	1-17
X	MARIA TERESA BORTOLIN et al. 'Clinical value of Epstein-Barr virus DNA levels in peripheral blood samples of italian patients with undifferentiated carcinoma of nasopharyngeal type.' CANCER LETTERS. 2006, vol.233, pp. 247-254. See abstract & methods.	1-17

☐ Further documents are listed in the continuation of Box C. ☐ See patent family 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 application or patent 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 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	Date of mailing of the international search report
28 JULY 2009 (28.07.2009)	**28 JULY 2009 (28.07.2009)**

Name and mailing address of the ISA/KR
Korean Intellectual Property Office
Government Complex-Daejeon, 139 Seonsa-ro, Seo-gu, Daejeon 302-701, Republic of Korea
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/MY2008/000101

Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of :

   a. type of material
   - [x] a sequence listing
   - [ ] table(s) related to the sequence listing

   b. format of material
   - [x] on paper
   - [ ] in electronic form

   c. time of filing/furnishing
   - [x] contained in the international application as filed
   - [ ] filed together with the international application in electronic form
   - [ ] furnished subsequently to this Authority for the purposes of search

2. [ ] In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

3. Additional comments:

INTERNATIONAL SEARCH REPORT

International application No.
PCT/MY2008/000101

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 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 No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

The separate inventions/groups of inventions are:

Invention 1: A method for detecting the presence or absence of Epstein-Barr Virus (Claims 1-9).
Invention 2: A method for detecting the presence or absence of EBV (Claims 10-14).
Invention 3: A kit for detecting the presence of EBV (Claims 15-17).

The only common concept between inventions 1-3 is an epstein barr virus PCR assay with latent membrane protein 1 primer.

D1 (Intervirology, 14 March 2007, vol. 50, pages 229-236), however, describes a epstein barr virus PCR assay with latent membrane protein 1 primer. The aforementioned concept, therefore, does not represent any contribution over the prior art.

1. ☒ As all required addtional 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 and, where applicable, the payment of a protest fee.
☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
☒ No protest accompanied the payment of additional search fees.