



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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| <p>(51) International Patent Classification ⁶ : C12Q 1/70</p> | <p>A3</p> | <p>(11) International Publication Number: WO 97/18334 (43) International Publication Date: 22 May 1997 (22.05.97)</p> |
| <p>(21) International Application Number: PCT/US96/18711 (22) International Filing Date: 12 November 1996 (12.11.96) (30) Priority Data: 60/006,854 15 November 1995 (15.11.95) US (71) Applicant: GEN-PROBE INCORPORATED [US/US]; 9880 Campus Point Drive, San Diego, CA 92121 (US). (72) Inventors: GORDON, Patricia; 3501 Saddle Drive, San Diego, CA 92077 (US). CARTER, Nick, M.; Apartment #10, 4620 North Avenue, San Diego, CA 92116 (US). BRENTANO, Steven, T.; 8426 Mesa Ridge Road, Santee, CA 92071 (US). HAMMOND, Philip, W.; Apartment #38, 5505 Valmont Road, Boulder, CO 80301 (US). (74) Agents: WARBURG, Richard, J. et al.; Lyon & Lyon L.L.P., First Interstate World Center, Suite 4700, 633 West Fifth Street, Los Angeles, CA 90071-2066 (US).</p> | | <p>(81) Designated States: AU, CA, JP, KR. Published <i>With international search report.</i> (88) Date of publication of the international search report: 2 October 1997 (02.10.97)</p> |
| <p>(54) Title: NUCLEIC ACID PROBES COMPLEMENTARY TO HUMAN PAPILLOMAVIRUS NUCLEIC ACID AND RELATED METHODS AND KITS (57) Abstract The present invention describes oligonucleotides targeted to HPV Type 16 and/or Type 18 nucleic acid sequences which are particularly useful to aid in detecting HPV Type 16 and or 18. The oligonucleotides can aid in detecting HPV Type 16 and/or Type 18 in different ways such as by acting as hybridization assay probes, helper probes, and/or amplification primers.</p> | | |

* (Referred to in PCT Gazette No. 34/1997, Section II)

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 96/18711

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| 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 | WO 88 06634 A (UNIV SYDNEY) 7 September 1988 cited in the application see the whole document --- | 1,2,6,9, 18,19, 31-33, 43-47 |
| X | DE 38 38 269 A (BEHRINGWERKE AG) 17 May 1990 see the whole document --- | 1,2,6,7, 31-33, 43-46, 62,63,65 |
| X | JP 05 192 200 A (TAKARA SHUZO CO LTD) 3 August 1993 see column 29, line 4 --- | 1,2,6,9, 18,19, 31-33, 43-47 |
| -/-- | | |
| <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. | | |
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| "O" document referring to an oral disclosure, use, exhibition or other means | "&" document member of the same patent family | |
| "P" document published prior to the international filing date but later than the priority date claimed | | |
| Date of the actual completion of the international search <p style="text-align: center;">9 May 1997</p> | Date of mailing of the international search report <p style="text-align: center;">31.07. 97</p> | |
| 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 <p style="text-align: center;">Müller, F</p> | |

INTERNATIONAL SEARCH REPORT

International Application No
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| C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT | | |
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| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| X | EP 0 477 972 A (ABBOTT LAB) 1 April 1992 see the whole document --- | 1,2,6, 10,18, 19, 31-33, 38,43-47 |
| X | WO 93 12245 A (IGEN INC) 24 June 1993 see the whole document --- | 1,2,6, 18,19 |
| X | WO 92 01815 A (EMERY VINCENT CLIVE ;BAVIN PEGGY JANE (GB); WALKER PATRICK (GB)) 6 February 1992 cited in the application see abstract and claims --- | 32,33, 43-46 |
| X | EP 0 402 132 A (TAKARA SHUZO CO) 12 December 1990 see the whole document --- | 32,33, 43-46 |
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| X | WO 94 26934 A (BAXTER DIAGNOSTICS INC ;BROWN JANICE T (US)) 24 November 1994 see abstract and claims --- | 1,2,7, 9-11, 13-16, 18,19, 31,32,34 |
| A | GENE, vol. 103, no. 2, 1 January 1991, pages 155-161, XP000272760 PAPER T ET AL: "USE OF SULFONATED PRIMERS TO DETECT AND TYPE PAPILLOMAVIRUS IN CELL CULTURES AND CERVICAL BIOPSIES" see the whole document --- | 1,2 |
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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 96/ 18711

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:

1. Claims 2,47-51,56-69 and partly 1,6-19,31-46,52-55,89,90,96-98:
Probes, primers, nucleic acids hybrids, probe mixes, kits and methods
for the detection of HPV type 16
 2. Claims 3-5,20-30,70-88,91-95 and partly 1,6-19,31-46,52-55,89,90,96-98
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.:

1. Claims 2,47-51,56-69 and partly 1,6-19,31-46,52-55,89,90,96-98

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

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FURTHER INFORMATION CONTINUED FROM PCT/ISA/210

Probes, primers, nucleic acids hybrids, helper probes, probe mixes, kits and methods for the detection of HPV type 18.

INTERNATIONAL SEARCH REPORT

information on patent family members

International Application No

PCT/US 96/18711

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
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INTERNATIONAL SEARCH REPORT

Information on patent family members

Inter national Application No

PCT/US 96/18711

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
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