European Patent Office

SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application Number
EP 00 92 2082

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	WO 99/06593 A (SARNOFF CORP) 11 February 1999 (1999-02-11) * page 25, paragraph 3 - page 26, paragraph 3 * * claim 9 * * page 23, last paragraph - page 24, last paragraph *	1-8, 23-29	G01N15/06C12Q1/6
X	WO 96/01836 A (NANOGEN INC) 25 January 1996 (1996-01-25) * claim 91; figure 17; example 12 *	1-8, 23-29	
A	SOSNOWSKI R G ET AL: "RAPID DETERMINATION OF SINGLE BASE MISMATCH MUTATIONS IN DNA HYBRIDS BY DIRECT ELECTRIC FIELD CONTROL" PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF USA, NATIONAL ACADEMY OF SCIENCE. WASHINGTON, US, vol. 94, February 1997 (1997-02), pages 1119-1123, XP000857636 ISSN: 0027-8424 * the whole document *	1-8, 23-29	
E	WO 00/61816 A (NERENBURG MICHAEL I ;EDMAN CARL F (US); NANOGEN BECTON DICKINSON P) 19 October 2000 (2000-10-19) * claims 1,2 *	1-8, 23-29	
A	WO 98/04746 A (SINAI SCHOOL MEDICINE) 5 February 1998 (1998-02-05) * the whole document *	1-8, 23-29	

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TECHNICAL FIELDS SEARCHED (Int.Cl.7)

C12Q
B01J

The supplementary search report has been based on the last set of claims valid and available at the start of the search.

Place of search	Date of completion of the search	Examiner
Munich	15 June 2004	Knudsen, H

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

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EPO FORM 1503 03.82 (P04C04)

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-8 (completely), 23-29 (partially)

This invention concerns amplification of target nucleic acids by PCR employing a primer immobilised on the bioelctronic microchip having a plurality of electronically addressable capture sites and addressing electronically the target nucleic acid to a capture site with a primer.

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2. claims: 9-16 (completely), 23-29,30-49 (partially)

A method for amplifying a target nucleic acid wherein two juxtaposed ligation probes are contacted with a target nucleic acid, the probes are ligated and the ligated probe template is used in a strand displacement amplification SDA and one reagent to the proceudre is addressed electronically to a bioelectronic microchip.

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3. claims: 17 (completely), 30-49 (partially)

A method for amplifying a target nucleic acid wherein two juxtaposed ligation probes are contacted with a target nucleic acid, the probes are ligated and the ligated probe template is used in a strand displacement amplification SDA, wherein the different steps of the method takes place contemporaneously.

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4. claims: 18-21 (completely), 30-49 (partially)

A method for amplifying a target nucleic acid wherein two juxtaposed ligation probes are contacted with a target nucleic acid, the probes are ligated and the ligated probe template is used in a strand displacement amplification SDA, wherein the ligation probes are rendered capable of being ligated together in a separate step.

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5. claims: 22 (completely), 30-49 (partially)

A method for amplifying a target nucleic acid wherein two juxtaposed ligation probes are contacted with a target nucleic acid, the probes are ligated and the ligated probe template is used in a strand displacement amplification SDA, wherein the SDA reaction is carried out without bumper primers.

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6. claim: 50 (partially)

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Application Number
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DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	SPARGO C A ET AL: "DETECTION OF M. TUBERCULOSIS DNA USING THERMOPHLIC STRAND DISPLACEMENT AMPLIFICATION" MOLECULAR AND CELLULAR PROBES, ACADEMIC PRESS, LONDON, GB, vol. 10, 1996, pages 247-256, XP002940177 ISSN: 0890-8508 * the whole document * ---	1-8, 23-29	

TECHNICAL FIELDS SEARCHED (Int.Cl.7)

The supplementary search report has been based on the last set of claims valid and available at the start of the search.

Place of search	Date of completion of the search	Examiner
Munich	15 June 2004	Knudsen, H

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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A : technological background
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3

EPO FORM 1503 03.82 (P04C04)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 00 92 2082

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

15-06-2004

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9906593 A	11-02-1999	US 6004752 A	21-12-1999
		AU 745864 B2	11-04-2002
		AU 8596598 A	22-02-1999
		CA 2296038 A1	11-02-1999
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WO 9601836 A	25-01-1996	US 6017696 A	25-01-2000
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		US 2002085954 A1	04-07-2002
		US 2002119484 A1	29-08-2002
		WO 9601836 A1	25-01-1996
		US 6245508 B1	12-06-2001
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		US 2003190632 A1	09-10-2003
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		US 5632957 A	27-05-1997
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		US 6306348 B1	23-10-2001
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		US 6569382 B1	27-05-2003
		US 6518022 B1	11-02-2003

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

Kit comprising primers for specific amplification of a HTLV1 plasmid by NASBA methodology, ie oligonucleotides with SEQ ID NOs 16-19 (see example 2).

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13. claim: 50 (partially)

Kit comprising oligonucleotides specifically for the detection of Factor V designed for use in a SDA reaction on a bioelectronic microchip, ie containing oligonucleotides with SEQ ID NOs 20-23 and 24 or 44, (see pages 42 and 55-56 of the application) or SEQ ID NOs 20-21 and 42-43, (see pages 42 and 47 of the application)..

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14. claim: 50 (partially)

Kit comprising oligonucleotides specific for Chlamydia designed for use in a specific SDA reaction on a bioelectronic microchip (ie containing oligonucleotides with SEQ ID NOs 25-30 (see page 56 of the application).

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15. claim: 50 (partially)

Kit comprising oligonucleotides specific for the hemochromatosis gene designed for use in a specific SDA reaction on a bioelectronic microchip (ie containing oligonucleotides with SEQ ID NOs 31-36 (see page 56 of the application).

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16. claim: 50 (partially)

Kit comprising oligonucleotides specific for Salmonella spaQ gene designed for use in a specific ligation-based SDA reaction (ie concerning oligonucleotides with SEQ ID NOs 37-41 or 51-52 (see pages 69 and 72 of the application).

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17. claim: 50 (partially)

Kit comprising generic oligonucleotides for the amplification of different targets in a SDA reaction employing the restriction enzyme BsoB1 on a bioelectronic microchip, ie containing oligonucleotides with SEQ ID NOs 1-4, (see pages 33 and Table 1 of the application).

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18. claim: 50 (partially)

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

Kit comprising oligonucleotides specifically for the detection of Factor V Leiden designed for use in a SDA reaction on a bioelectronic microchip, ie containing oligonucleotides with SEQ ID NOs 5-10, (see pages 35-36 of the application).

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7. claim: 50 (partially)

Kit comprising oligonucleotides specific for the detection of E.coli designed for use in a specific SDA reaction on a bioelectronic microchip (ie containing the oligonucleotide with SEQ ID NO 11 (see page 33 and Table I of the application).

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8. claim: 50 (partially)

Kit comprising oligonucleotides specific for the detection of S.dysenteriae designed for use in a specific SDA reaction on a bioelectronic microchip (ie containing the oligonucleotide with SEQ ID NO 12 (see page 33 and Table I of the application).

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9. claim: 50 (partially)

Kit comprising oligonucleotides specific for the detection of S.typhimurium designed for use in a specific SDA reaction on a bioelectronic microchip (ie containing the oligonucleotide with SEQ ID NO:13 (see page 33 and Table I of the application).

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10. claim: 50 (partially)

Kit comprising oligonucleotides specific for the detection of C.jejuni designed for use in a specific SDA reaction on a bioelectronic microchip (ie containing the oligonucleotide with SEQ ID NO:14 (see page 33 and Table I of the application).

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11. claim: 50 (partially)

Kit comprising capture oligonucleotide with SEQ ID NO. 15 designed for use in a SDA reaction on a bioelectronic microchip (see page 39 of the application).

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12. claim: 50 (partially)

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

Kit comprising ligation probes specific for the asd gene designed for use in a specific ligation-based SDA reaction (ie concerning oligonucleotides with SEQ ID NOs 59-60 (see page 72 of the application).

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25. claim: 50 (partially)

Kit comprising ligation probes specific for the lcrV gene designed for use in a specific ligation-based SDA reaction (ie concerning oligonucleotides with SEQ ID NOs 61-62 (see page 72 of the application).

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☒ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

1-8 (completely), 23-29 (partially)

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

Kit comprising ligation probes specific for the stx1 gene designed for use in a specific ligation-based SDA reaction (ie concerning oligonucleotides with SEQ ID NOs 45-46 (see page 72 of the application).

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19. claim: 50 (partially)

Kit comprising ligation probes specific for the stx2 gene designed for use in a specific ligation-based SDA reaction (ie concerning oligonucleotides with SEQ ID NOs 47-48 (see page 72 of the application).

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20. claim: 50 (partially)

Kit comprising ligation probes specific for the eaeA gene designed for use in a specific ligation-based SDA reaction (ie concerning oligonucleotides with SEQ ID NOs 49-50 (see page 72 of the application).

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21. claim: 50 (partially)

Kit comprising ligation probes specific for the gnd gene designed for use in a specific ligation-based SDA reaction (ie concerning oligonucleotides with SEQ ID NOs 53-54 (see page 72 of the application).

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22. claim: 50 (partially)

Kit comprising ligation probes specific for the ipaH gene designed for use in a specific ligation-based SDA reaction (ie concerning oligonucleotides with SEQ ID NOs 55-56 (see page 72 of the application).

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23. claim: 50 (partially)

Kit comprising ligation probes specific for the sodB gene designed for use in a specific ligation-based SDA reaction (ie concerning oligonucleotides with SEQ ID NOs 57-58 (see page 72 of the application).

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24. claim: 50 (partially)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 00 92 2082

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

15-06-2004

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9601836 A		US 6403367 B1	11-06-2002
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EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

专利名称(译)	使用链置换扩增和生物电子微芯片技术扩增和分离核酸序列		
公开(公告)号	EP1177423A4	公开(公告)日	2004-10-27
申请号	EP2000922082	申请日	2000-04-11
[标]申请(专利权)人(译)	NANOGENBECTON迪金森PARTNERSHIP		
申请(专利权)人(译)	NANOGEN / BECTON DICKINSON PARTNERSHIP		
当前申请(专利权)人(译)	NANOGEN / BECTON DICKINSON PARTNERSHIP		
[标]发明人	NERENBERG MICHAEL I EDMAN CARL F		
发明人	NERENBERG, MICHAEL, I. EDMAN, CARL, F.		
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CPC分类号	C12Q1/6844 C12P19/34 C12Q1/6825 C12Q1/6837 C12Q2537/143 C12Q2531/119 C12Q2565/501 C12Q2565/607		
代理机构(译)	庆祝活动，JENTSCHURA & PARTNER		
优先权	09/290632 1999-04-12 US		
其他公开文献	EP1177423A1		
外部链接	Espacenet		

摘要(译)

描述和公开了使用新颖的链置换扩增技术结合生物电子微芯片技术对样品中的核酸序列进行多重扩增和分析的装置，方法和物质组成。 具体地，将样品中的核酸扩增以形成扩增子，将扩增子寻址到生物电子微芯片的指定电子可寻址的捕获位点，捕获并标记寻址的扩增子，然后分析捕获位点是否存在标记。 可以使用链置换扩增来扩增样品。 本发明还适用于本领域技术人员熟知的其他扩增方法。 捕获和标记步骤可以通过使用具有序列特异性报道分子的通用捕获的方法，或者通过利用通用报告基因的序列特异性捕获的方法来进行。 可以通过荧光，化学发光，电子化学发光或本领域技术人员熟知的任何其他技术来检测标记。 本发明还允许在单个诊断平台上分析多个核酸靶，其中可以在与微芯片组件直接接触或在微芯片阵列上方的溶液中扩增核酸。