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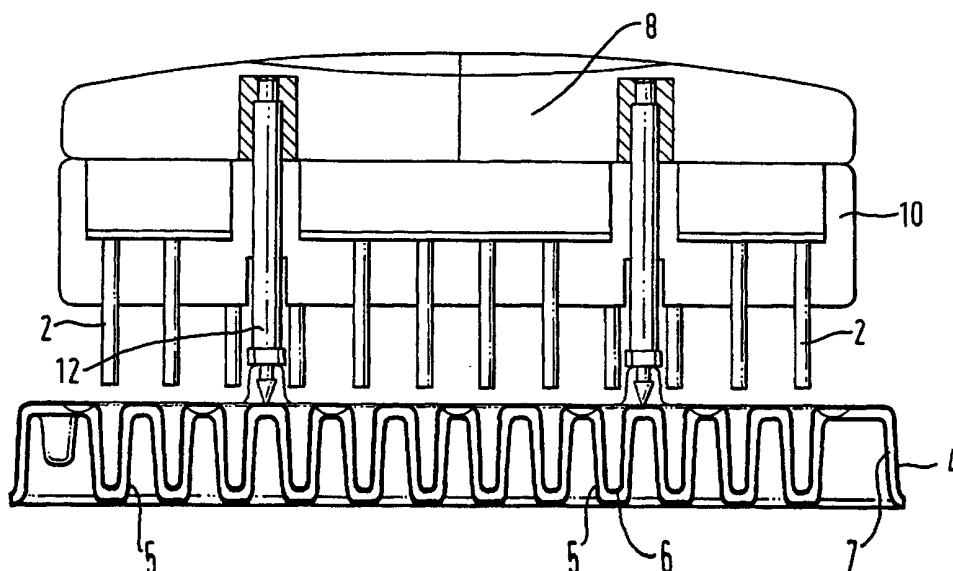
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9923324.9 1 October 1999 (01.10.1999) GB
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[Continued on next page]

(54) Title: SEPARATION APPARATUS AND METHOD



(57) Abstract: A separation device is disclosed comprising an array of magnetic or magnetisable members (2) and a corresponding array of protective sleeves (6) therefor associated with the magnetic members (2). The magnetic members (2) are removable from the sleeves (6). The sleeves (6) in turn may be removably introduced into the wells (5) of a micro-titre plate (4). Also disclosed is a method of preparing single-stranded DNA (ssDNA) from double-stranded DNA (dsDNA) comprising the steps of immobilising a strand of the dsDNA on a solid magnetic or magnetisable carrier, inserting a magnetic or magnetisable member into a solution containing the DNA to attract said carrier, separating the dsDNA into single strands, and thereafter removing the member from the solution thereby removing ssDNA from the solution.



patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

(88) Date of publication of the international search report:  
30 August 2001

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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

## INTERNATIONAL SEARCH REPORT

International Application No

Pct./GB 00/03763

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 B03C1/28 C12N15/10

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 7 B03C C12N

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

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	PATENT ABSTRACTS OF JAPAN vol. 7, no. 259 (C-195) [1404], 18 November 1983 (1983-11-18) & JP 58 143854 A (NIPPON DENKI KK), 26 August 1983 (1983-08-26) the whole document ---	1,3,4,6, 14,15
X	WO 99 42832 A (BIO NOBILE OY ;KORPELA MATTI (FI)) 26 August 1999 (1999-08-26) page 11, line 18 -page 13, line 13 page 16, paragraph 3; claims 1,4-7; figure 2B -----	1-7,14, 15

☐ Further documents are listed in the continuation of box C.

☒ 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

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"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.

"&amp;" document member of the same patent family

Date of the actual completion of the international search

30 November 2000

Date of mailing of the international search report

09.03.01

Name and mailing address of the ISA

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# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/GB 00/03763

## 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.:

1-15

### 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: 1-15

Magnetic separation device and method

2. Claims: 16-19

Method of preparing single-stranded DNA from double-stranded DNA

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PC GB 00/03763

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 58143854 A	26-08-1983	JP 1487950 C JP 63036296 B	23-03-1989 19-07-1988
WO 9942832 A	26-08-1999	FI 980399 A AU 2524299 A EP 1058851 A	15-03-1999 06-09-1999 13-12-2000