METHODS AND APPARATUS FOR SEPARATION AND ISOLATION OF COMPONENTS FROM A BIOLOGICAL SAMPLE

Devices, systems and methods for use in separating sample materials into different sample components and then isolating one or more of the sample components for further processing or analysis are disclosed. Devices employ configurations that optionally allow a sample material to be electrophoretically separated into sample components in a separation matrix within a separation conduit. The sample components may then be detected in a detection zone in the separation conduit and then selected components shunted to a component collection conduit within the device downstream of the detection zone for further processing or analysis based on information received at the detection zone. Methods of using these devices, and systems that incorporate these devices are also envisioned.
### INTERNATIONAL SEARCH REPORT

**PCT/US03/0628**

- **CLASSIFICATION OF SUBJECT MATTER**
  - IPC(7) : G01N 33/558
  - US CL : 536/514
  - According to International Patent Classification (IPC) or to both national classification and IPC

- **FIELDS SEARCHED**

  - Minimum documentation searched (classification system followed by classification symbols)
    - U.S. : 536/514

  - 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 practicable, search terms used)**
  - EAST, MEDLINE, STN

### DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>US 5,989,402 A (CHOW et al) 23 November 1999 (23.11.1999), see entire document.</td>
<td>28-70</td>
</tr>
<tr>
<td>Y</td>
<td>US 6,238,538 B1 (PARCE et al) 29 May 2001 (29.05.2001), see entire document.</td>
<td>28-70</td>
</tr>
<tr>
<td>Y, P</td>
<td>US 6,444,461 B1 (KNAPP et al) 03 September 2002 (03.11.2002), see entire document.</td>
<td>1-5, 8, 27, 40, 44-58, 62-78, 82-86, 90-92</td>
</tr>
</tbody>
</table>

- 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 published on or after the international filing date
  - "L" document which, by itself or combined with other such documents, establishes the publication date of another citation or other special reason (as specified)
  - "O" document referring to an oral disclosure, use, exhibition or other means
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  - "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
  - "Z" document member of the same patent family

- **Date of the actual completion of the international search**

- **Date of mailing of the international search report**
  - 27 OCT 2003

- **Name and mailing address of the ISA/US**
  - Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450
  - Facsimile No. (703)305-3230

- **Telephone No.**
  - 703-308-1235

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*Further documents are listed in the continuation of Box C.*

*See patent family annex.*
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