(57) Abstract: Disclosed herein is a system for the collection, treatment and delivery of an autologous blood sample, comprising a first syringe having a first body portion. A first sample transfer portion has a first syringe inlet for drawing an untreated blood sample from a patient and a first syringe outlet for dispensing the untreated blood sample. A blood sample treatment chamber having a chamber inlet, the first syringe outlet being operable to establish a dedicated first fluid coupling with the chamber inlet to dispense the untreated blood sample to the blood sample treatment chamber. The blood sample treatment chamber having a chamber outlet for dispensing a treated blood sample following treatment. The second syringe has a second body portion and a second sample transfer portion, the second sample transfer portion having a passage with a first access location which is operable to form a dedicated second fluid coupling with the chamber outlet. The second body portion has a second syringe outlet, the passage having a second access location for fluid communication with the second syringe outlet, releasable lock means for forming a locked third fluid coupling between the second access location and the second syringe outlet. The lock means is operable in response to a release signal to release the third fluid coupling, the second syringe outlet being operable when released from the third fluid coupling to form a fourth fluid coupling with a blood sample delivery unit.


— as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TG, ZM), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declared under Rule 4.17:

Published:
— with international search report
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report: 3 November 2005

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.
A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61M5/178 A61J1/00 G06F19/00

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 A61M A61J G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic database consulted during the international search (name of database and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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<tr>
<td>X</td>
<td>US 4 415 802 A (LONG ET AL) 15 November 1983 (1983-11-15) abstract; figure 1</td>
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<td>WO 02/07800 A (KIM, HYUNG-SOON) 31 January 2002 (2002-01-31) the whole document</td>
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<tr>
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<td>US 5 334 163 A (SINNETT ET AL) 2 August 1994 (1994-08-02) abstract; figure 1</td>
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<td>A</td>
<td>US 4 265 101 A (KAPLAN ET AL) 5 May 1981 (1981-05-05) the whole document</td>
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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
  *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
  *O* document referring to an oral disclosure, use, exhibition or other reason
  *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
  *Z* document member of the same patent family

Date of actual completion of the international search

6 September 2005

Date of mailing of the international search report

19.09.2005

Name and mailing address of the ISA

European Patent Office, P.B. 5618 Patentlaan 2
NL – 2280 HV Rijswijk
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Fax. (+31-70) 340-0316

Authorized officer

Ceccarelli, D
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<tr>
<td>A</td>
<td>US 4 787 222 A (IRAZOQUI ET AL) 29 November 1988 (1988-11-29) the whole document</td>
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</tr>
<tr>
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<td>WO 2004/047641 A (VASOGEN IRELAND LIMITED; LIM, BERNARD, C., B; WORONA, TARAS; KANBERGS,) 10 June 2004 (2004-06-10) the whole document</td>
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</tr>
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<td>WO 2005/050497 A (VASOGEN IRELAND LIMITED; LIM, BERNARD, C.B; WORONA, TARAS; KANBERGS, D) 2 June 2005 (2005-06-02) the whole document</td>
<td>1-42, 64-69, 76-78</td>
</tr>
<tr>
<td>X</td>
<td>WO 01/54755 A (PROTECTIVE SHIELD LIMITED; FERRIER INTERNATIONAL LIMITED; MOORE, COLIN) 2 August 2001 (2001-08-02) the whole document</td>
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</tr>
<tr>
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<td>WO 95/08359 A (JOHNSON, TIMOTHY) 30 March 1995 (1995-03-30) the whole document</td>
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</tr>
<tr>
<td>X</td>
<td>WO 02/22201 A (ERASMUS UNIVERSITEIT ROTTERDAM; AUGUSTIJN, CATEHILJNE, DINE; SNIJDBERS,) 21 March 2002 (2002-03-21) the whole document</td>
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</tr>
<tr>
<td>X</td>
<td>US 5 971 972 A (ROSENBAUM ET AL) 26 October 1999 (1999-10-26) the whole document</td>
<td>62,63</td>
</tr>
<tr>
<td>X</td>
<td>US 5 272 318 A (GORMAN ET AL) 21 December 1993 (1993-12-21) the whole document</td>
<td>76-78</td>
</tr>
<tr>
<td>X</td>
<td>US 6 139 495 A (DE LA HUERGA ET AL) 31 October 2000 (2000-10-31) the whole document</td>
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</tr>
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### INTERNATIONAL SEARCH REPORT

#### Box 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 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:

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.:

**Remark on Protest**

□ The additional search fees were accompanied by the applicant's protest.  

✘ No protest accompanied the payment of additional search fees.
This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-42, 64-69

   A device for controlling a medical materials dispenser, with a control portion and two fluid couplings one fluid coupling being provided with releasable locking means, as well as a system for the treatment of an autologous blood sample, comprising two syringes, a blood sample treatment chamber, locking means associated with one syringe, identification means, verification means and release signal generating means.

2. claims: 43-61, 70-75

   A material dispensing device as well as a syringe with a container portion and a transfer portion including a passage with first, second and third access location, whereby the second or third access location has a penetrable septum.

3. claims: 62-63

   A material dispensing device with a chamber, an outlet, valve means including a penetrable septum for controlling the outlet, and a penetrating member for penetrating the septum, whereby penetration is only permitted by a particular penetrating member.

4. claims: 76-78

   Methods of monitoring a material sample from a patient, whereby the sample is delivered to a chamber, treated in the chamber and collected from the chamber.
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<tbody>
<tr>
<td></td>
<td></td>
<td>EP 0071931 A2</td>
<td>16-02-1983</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JP 1194521 C</td>
<td>12-03-1984</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JP 58027270 A</td>
<td>17-02-1983</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JP 58028617 B</td>
<td>17-06-1983</td>
</tr>
<tr>
<td>WO 0207800 A</td>
<td>31-01-2002</td>
<td>KR 2002009311 A</td>
<td>01-02-2002</td>
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<tr>
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<td></td>
<td>AU 6739600 A</td>
<td>05-02-2002</td>
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<tr>
<td></td>
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<td>WO 0207800 A1</td>
<td>31-01-2002</td>
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<tr>
<td></td>
<td></td>
<td>KR 2002059588 A</td>
<td>13-07-2002</td>
</tr>
<tr>
<td>US 5334163 A</td>
<td>02-08-1994</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>US 4265101 A</td>
<td>05-05-1981</td>
<td>NONE</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>WO 9004076 A1</td>
<td>19-04-1990</td>
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<td>WO 2004047641 A2</td>
<td>10-06-2004</td>
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<tr>
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<td>WO 2004095379 A1</td>
<td>04-11-2004</td>
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<td>WO 2004047641 A2</td>
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<td></td>
<td>WO 2004095379 A1</td>
<td>04-11-2004</td>
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<td></td>
<td>WO 2005050497 A1</td>
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<td>US 2005139651 A1</td>
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<td>US 2005154368 A1</td>
<td>14-07-2005</td>
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<td>WO 2005062751 A2</td>
<td>14-07-2005</td>
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<td>WO 2005050497 A1</td>
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<td>US 2005139651 A1</td>
<td>30-06-2005</td>
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<tr>
<td>WO 0154755 A</td>
<td>02-08-2001</td>
<td>WO 0154755 A1</td>
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<tr>
<td></td>
<td></td>
<td>WO 0154756 A1</td>
<td>02-08-2001</td>
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<td></td>
<td>AU 2657801 A</td>
<td>07-08-2001</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TW 528610 B</td>
<td>21-04-2003</td>
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<tr>
<td></td>
<td></td>
<td>AU 2817801 A</td>
<td>07-08-2001</td>
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<tr>
<td></td>
<td></td>
<td>WO 9508359 A1</td>
<td>30-03-1995</td>
</tr>
<tr>
<td>WO 0222201 A</td>
<td>21-03-2002</td>
<td>NL 1016207 C2</td>
<td>18-03-2002</td>
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<td></td>
<td></td>
<td>AU 1281402 A</td>
<td>26-03-2002</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CA 2431140 A</td>
<td>21-03-2002</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EP 1322376 A</td>
<td>02-07-2003</td>
</tr>
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<td></td>
<td></td>
<td>WO 0222201 A1</td>
<td>21-03-2002</td>
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<td></td>
<td></td>
<td>US 2004147879 A1</td>
<td>29-07-2004</td>
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<td>US 5971972 A</td>
<td>26-10-1999</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>US 6402207 B1</td>
<td>11-06-2002</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AT 281868 T</td>
<td>15-11-2004</td>
</tr>
<tr>
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</tr>
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<tr>
<td>US 2004201216 A1</td>
<td>AU 4428499 A</td>
<td>30-12-1999</td>
<td></td>
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<tr>
<td></td>
<td>BR 9911101 A</td>
<td>06-03-2001</td>
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<td>CA 2335064 A1</td>
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<td></td>
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<tr>
<td></td>
<td>CN 1311704 A</td>
<td>05-09-2001</td>
<td></td>
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<td>DE 69921810 D1</td>
<td>16-12-2004</td>
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<td></td>
<td>JP 2002517292 T</td>
<td>18-06-2002</td>
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<td></td>
<td>MX PA00012200 A</td>
<td>17-10-2002</td>
<td></td>
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<td></td>
<td>WO 9964103 A1</td>
<td>16-12-1999</td>
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US 5272318 A 21-12-1993 NONE

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US 6139495 A 31-10-2000 NONE