

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
21 November 2002 (21.11.2002)

PCT

(10) International Publication Number
WO 02/092151 A3

(51) International Patent Classification⁷: **A61M 1/34**, 1/16

(21) International Application Number: PCT/US02/22075

(22) International Filing Date: 4 March 2002 (04.03.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/799,466 5 March 2001 (05.03.2001) US

(71) Applicant: **TRANSVIVO, INC.** [US/US]; Suite 108,
1100 Lincoln Avenue, Napa, CA 94558 (US).

(72) Inventors: **GORSUCH, Reynolds, G.**; 1119 State Line,
Yountville, CA 94599 (US). **VENKAT, Kris**; 62 Kingberry
Drive, Somerset, NJ 08873 (US).

(74) Agent: **HUNT, Dale, C.**; KNOBBE, MARTENS, OLSON
& BEAR, LLP, 16th Floor, 620 Newport Center Drive,
Newport Beach, CA 92660 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT (util-
ity model), AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA,

CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (util-
ity model), DE, DK (utility model), DK, DM, DZ, EC, EE
(utility model), EE, ES, FI (utility model), FI, GB, GD, GE,
GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ,
LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN,
MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD,
SE, SG, SI, SK (utility model), SK, SL, TJ, TM, TN, TR,
TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR,
GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent
(BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,
NE, SN, TD, TG).

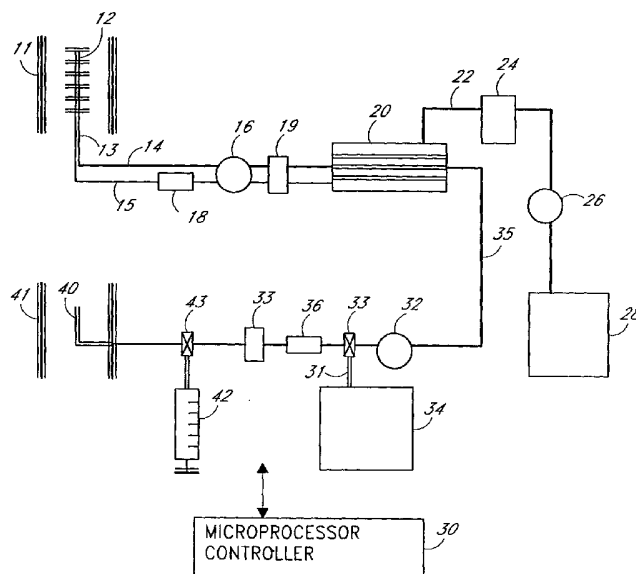
Published:

- 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:
6 February 2003

[Continued on next page]

(54) Title: APPARATUS AND METHOD FOR SELECTIVE REDUCTION OF LOCALIZED EDEMA



(57) Abstract: Segmental edema is treated by inserting a plasma extraction filter device (12) in a major vein (11) of a body segment or servicing the body segment containing the edemic tissues, and inserting a return catheter (40) in a major artery (41) of the body segment affected or feeding the body segment from which plasma is extracted. Blood plasma and plasma proteins extracted from the edemic body segment through the plasma extraction filter are directed to an ultrafiltration apparatus (20) where plasma water is separated from the plasma proteins. Plasma proteins are returned to the body segment from which the plasma was extracted via the return catheter (40) in the major artery (41) of the subject body segment.



WO 02/092151 A3



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

National Application No

PCT/US 02/22075

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 A61M1/34 A61M1/16

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

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)

WPI Data, EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 152 743 A (ATKIN JOHN ET AL) 6 October 1992 (1992-10-06) cited in the application column 3, line 9 - line 43 column 8, line 59 - column 9, line 23; figure 6 ----	17-30
A	US 4 411 792 A (BABB ALBERT L) 25 October 1983 (1983-10-25) abstract; figure 1 ----	17-30
A	EP 0 274 178 A (FISHER SCIENT GROUP INC) 13 July 1988 (1988-07-13) column 6, line 38 - line 56 -----	17-30

☐ 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 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.

* & * document member of the same patent family

Date of the actual completion of the international search

22 November 2002

Date of mailing of the international search report

03/12/2002

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

Péru, L

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 02/22075

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.: 1-16, 31-32
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for therapeutical treatment of the human or animal body by surgery
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. ☐ 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.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 02/22075

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5152743	A	06-10-1992	US 4950224 A	21-08-1990
			US 5224926 A	06-07-1993
			AT 136472 T	15-04-1996
			DE 68926197 D1	15-05-1996
			DE 68926197 T2	21-11-1996
			EP 0354061 A2	07-02-1990
			ES 2088390 T3	16-08-1996
			GR 3020503 T3	31-10-1996
			US 5242382 A	07-09-1993
			US 5151082 A	29-09-1992
US 4411792	A	25-10-1983	NONE	
EP 0274178	A	13-07-1988	US 4767399 A	30-08-1988
			AU 588767 B2	21-09-1989
			AU 7657987 A	09-06-1988
			CA 1258020 A1	01-08-1989
			DE 3772541 D1	02-10-1991
			EP 0274178 A1	13-07-1988
			JP 63150076 A	22-06-1988