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(71) Applicant (for all designated States except US): **TRAN-
SCUTANEOUS TECHNOLOGIES INC.** [JP/JP]; 8F,
1-6-10, Ebisu-Minami, Shibuya-ku, Tokyo 150-0022 (JP).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **CARTER, Darrick**
[US/US]; 836 Northwest 64th, Seattle, WA 98107 (US).
KALAMASZ, Dale [US/US]; 12045 184th NE, Redmond,
WA 98052 (US).

(74) Agents: **ABRAMONTE, Frank** et al.; Seed Intellectual
Property Law Group PLLC, Suite 6300, 701 Fifth Avenue,
Seattle, WA 98104-7092 (US).

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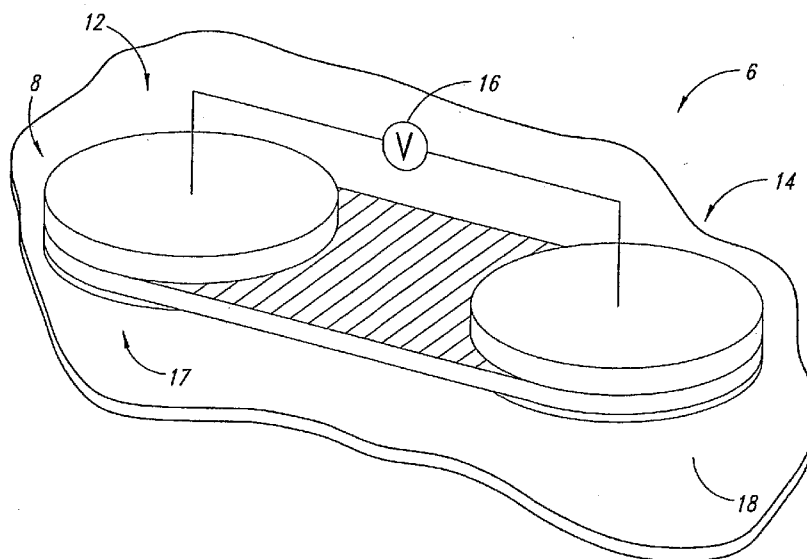
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[Continued on next page]

(54) Title: TRANSDERMAL DRUG DELIVERY SYSTEMS, DEVICES, AND METHODS EMPLOYING NOVEL PHARMA-
CEUTICAL VEHICLES



(57) Abstract: Systems, devices, and methods for transdermal delivery of one or more therapeutic active agents to a biological interface. An iontophoretic drug delivery system is provided for transdermal delivery of one or more therapeutic active agents to a biological interface of a subject. The iontophoretic drug delivery system includes at least one active agent reservoir. The one or more active agent reservoirs are loadable with a vehicle for transporting, delivering, encapsulating, and/or carrying the one or more active agents.

WO 2007/041314 A3



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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INTERNATIONAL SEARCH REPORT

International application No

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A. CLASSIFICATION OF SUBJECT MATTER

INV. A61N1/00

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)

A61N A61K

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, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6 119 036 A1 (ALLEN JR LOYD V [US]) 12 September 2000 (2000-09-12) abstract; figure 1 column 1, line 16 - line 46 column 1, line 57 - column 2, line 24 column 3, line 7 - line 20 column 4, line 30 - line 47	1-27
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☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

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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

Pereda Cubián, David

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2006/038099

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.: 36-40
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by therapy
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.:

1- 27

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: 1-27

Iontophoretic drug delivery device for transdermal delivery of one or more therapeutic active agents, comprising an active electrode assembly with at least one active electrode providing electromotive force and at least one agent reservoir with a pharmaceutically acceptable vehicle for transporting the one or more active agents, the pharmaceutically acceptable vehicle comprising at least one surfactant, at least one nonpolar solvent and at least one polar agent.

2. claims: 28-33

Method for preparing an active agent laminate for an iontophoretic drug delivery device, comprising preparing a lipophilic composition comprising a first surfactant and a nonpolar solvent, preparing a hydrophilic composition comprising a second surfactant and a polar agent, mixing the lipophilic composition and the hydrophilic composition using a high-shear mixer to form a pharmaceutically acceptable vehicle having a lipophilic phase and a hydrophilic phase, impregnating at least one substrate with the pharmaceutically acceptable vehicle, forming a multi-layer active agent laminate and physically coupling the multi-layer active agent laminate to an active electrode assembly of an iontophoretic drug delivery device.

3. claims: 34,35

Article of manufacture for transdermal administration of medication by iontophoresis, comprising an iontophoretic drug delivery device comprising an active electrode assembly with at least one active electrode providing electromotive force and at least one active agent reservoir with a pharmaceutically acceptable vehicle for transporting the one or more active agents, the pharmaceutically acceptable vehicle comprising at least one surfactant, at least one nonpolar solvent and at least one polar agent, at least one dosage comprising one or more active agents selected from analgesics, anesthetics, or combinations thereof, the at least one dosage form loaded in the pharmaceutically acceptable vehicle, and a package insert providing instructions for transdermally administering to a subject in need of pain therapy, a therapeutically effective amount of the at least one dosage form.

4. claims: 41-53

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Iontophoretic drug delivery device for transdermal delivery of one or more therapeutic active agents, comprising an active electrode assembly with at least one active electrode providing electromotive force and at least one agent reservoir with a pharmaceutically acceptable vehicle comprising a plurality of first vesicles, wherein the plurality of first vesicles are selected from liposomes, nisomes, ethasomes, transfersomes, virosomes, cyclic oligosaccharides, non ionic surfactant vesicles, and phospholipid surfactant vesicles, at least some of the first vesicles including one or more therapeutic active agents.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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