Title: ORAL INSULIN THERAPY

Abstract: Pharmaceutical dosage forms for oral administration to a patient for the treatment of diabetes, comprising insulin and a delivery agent that facilitates insulin transport in a therapeutically effective amount to the bloodstream and that result in a lower incidence of vascular diseases associated with the repeated administration of insulin are disclosed. Also disclosed is a method of attenuating the undesirable incidence of diseases associated with chronic dosing of insulin is provided whereby the oral administration to a patient of insulin along with a suitable delivery agent that facilitates the absorption of insulin from the gastrointestinal tract of the patient in a therapeutically effective amount, for treatment of diabetes.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
   IPC(7) : A61K 38/28
   US CL : 514/3, 4; 530/303
   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)
   U.S. : 514/3, 4; 530/303

   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 practicable, search terms used)
   Please See Continuation Sheet

C. 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></td>
<td>document.</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>US 6,540,982 B1 (ADJEI et al.) 01 April 2003 (01.04.2003), see entire document.</td>
<td>1-58</td>
</tr>
<tr>
<td>A</td>
<td>US 6,399,090 B1 (SHEHADEH) 04 June 2002 (04.06.2002), see entire document.</td>
<td>1-58</td>
</tr>
</tbody>
</table>

☐ Further documents are listed in the continuation of Box C. ☐ See patent family 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 application or patent 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
  "I" 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
02 June 2003 (02.06.2003)

Date of mailing of the international search report
01 JUL 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

Authorised officer

Telephone No. (703) 308-0196

Form PCT/ISA/210 (second sheet) (July 1998)
Continuation of B. FIELDS SEARCHED Item 3:
STN WEST BIOSIS MEDLINE CAPLUS SCISEARCH USPATFULL
search terms: unmodified, natural, insulins, oral, injection, subcutaneous, solid, dose, dosage