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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.



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(54) Title: METHODS OF INCREASING THE GLUCOSE RESPONSIVENESS OF PANCREATIC β -CELLS

(57) Abstract: The instant invention involves methods of increasing the glucose responsiveness of pancreatic β -cells by providing a source of a glucoincretin. Also provided are methods of treating a disorder characterized by impaired β -cell function by providing a population of β -cells and a source of a glucoincretin. Additionally, the invention pertains to a population of purified β -cells and a kit for use in the treatment of a disorder characterized by impaired function.

INTERNATIONAL SEARCH REPORT

International Application No

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61K48/00 A61K38/26 C12N5/10 C12N5/08 A61K35/39
 A61K31/522 A61P5/48 A61K31/52

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 C12N 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)

BIOSIS, EPO-Internal, WPI Data, MEDLINE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>THORENS BERNARD ET AL: "Glucagon-like peptide-I and the control of insulin secretion in the normal state and in NIDDM." DIABETES, vol. 42, no. 9, 1993, pages 1219-1225, XP001015666 ISSN: 0012-1797 abstract</p> <p>page 1219, column 2, paragraph 2 page 1220, column 2, paragraph 4 -page 1221, column 1, paragraph 1 page 1221, column 2, paragraph 3 -page 1222, column 1, paragraph 2 page 1223, column 2, paragraph 3 -page 1224, column 1, paragraph 1</p> <p style="text-align: center;">---</p> <p style="text-align: center;">-/--</p>	1,4,6-8

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
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- *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

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/00537

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DACHICOURT N ET AL: "Decreased glucose-induced cAMP and insulin release in islets of diabetic rats: Reversal by IBMX, glucagon, GIP." AMERICAN JOURNAL OF PHYSIOLOGY, vol. 271, no. 4 PART 1, 1996, pages E725-E732, XP001015623 ISSN: 0002-9513 abstract page E725, column 1, paragraph 2 -column 2, paragraph 1 page E727, column 1, paragraph 3 -page E728, column 1, paragraph 1 page E729, column 2, paragraph 4 -page E731 ---	1-28
X	WO 99 64061 A (GOKE BURKHARD ;BYRNE MARIA (US); BIONEBRASKA INC (US)) 16 December 1999 (1999-12-16) abstract page 3, line 23 -page 4, line 8 page 4, line 15 - line 19 page 6, line 2 - line 21 page 7, line 3 - line 14 page 23, line 16 -page 24, line 5 ---	1,2,4,6, 7
X	WO 97 29180 A (BRODERICK CAROL L ;BORTS TRACY L (US); MILLER ANNE R (US); LILLY C) 14 August 1997 (1997-08-14) abstract page 1, line 2 - line 6 page 21, line 23 page 4, line 15 - line 30 page 5, line 4 - line 11 page 6, line 3 - line 20 page 10, line 30 -page 11, line 8 ---	1-3, 6-14,17, 18, 22-24, 27,28
X	US 5 773 255 A (HEGRE ORION D ET AL) 30 June 1998 (1998-06-30) the whole document ---	1,2,4, 6-12,15, 17-23, 25,27,28
A	WO 98 32866 A (HARE PETER FRANCIS JOSEPH O ;MARIE CURIE CANCER CARE (GB); ELLIOTT) 30 July 1998 (1998-07-30) cited in the application the whole document --- -/--	5,16,26

INTERNATIONAL SEARCH REPORT

International Application No
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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.
P,X	WO 00 47721 A (KAGAN DAVID ;ONTOGENY INC (US); PANG KEVIN (US)) 17 August 2000 (2000-08-17) page 4, paragraph 5 -page 5, paragraph 3 page 7, paragraph 2 -page 8, paragraph 1 page 18, paragraph 3 page 26, last paragraph -page 27, paragraph 2 page 28, last paragraph page 31, paragraph 2 - paragraph 3 ---	1-28
P,X	HUSSAIN-KHAN H ET AL: "Evaluation of the effect of glp-1 on insulin secretion by btc-tet cells encapsulated in a flatsheet macrodevice." INTERNATIONAL JOURNAL OF ARTIFICIAL ORGANS, vol. 23, no. 8, August 2000 (2000-08), page 583 XP001015482 XXVII Congress of the European Society for Artificial Organs in Co-operation with the European Society for Engineering and Medicine;Lausanne, Switzerland; August 31-September 02, 2000 ISSN: 0391-3988 abstract -----	1-4, 6-15, 17-25, 27,28

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Present claims 6,7,17,18,20,21,27,28 relate to compound/s defined by reference to a desirable characteristic or property, namely cAMP raising agents (claims 6,17,20,27), drugs, enzymes or hormones (claims 7,18,21,28).

The claims cover all compounds having this characteristic or property, whereas the application provides support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT for only a very limited number of such compounds. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the compound by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible. Consequently, the search has been carried out for those parts of the claims which appear to be clear, supported and disclosed, namely those parts relating to IBMX, GLP-1, GIP, glucagon (see claim 7, 18, 21, 28) and the general concept of the invention.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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