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(71) Applicant (for all designated States except US): **RENNOVIA, INC.** [US/US]; 1080 Hamilton Avenue, Menlo Park, California 94025 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **BOUSSIE, Thomas, R.** [US/US]; c/o Rennovia, Inc., 1080 Hamilton Avenue, Menlo Park, California 94025 (US). **DIAS, Eric, L.** [US/US]; c/o Rennovia, Inc., 1080 Hamilton Avenue, Menlo Park, California 94025 (US). **FRESCO, Zachary, M.** [US/US]; c/o Rennovia, Inc., 1080 Hamilton Avenue, Menlo Park, California 94025 (US). **MURPHY, Vincent, J.** [GB/US]; c/o Rennovia, Inc., 1080 Hamilton Avenue, Menlo Park, California 94025 (US). **SHOEMAKER, James** [CA/US]; c/o Rennovia, Inc., 1080 Hamilton Avenue, Menlo Park, California 94025 (US). **ARCHER, Raymond** [NZ/US]; c/o Rennovia, Inc., 1080 Hamilton Avenue, Menlo Park, California 94025 (US). **JIANG,**

Hong [US/US]; c/o Rennovia, Inc., 1080 Hamilton Avenue, Menlo Park, California 94025 (US).

(74) Agents: **KEIL, Vincent, M.** et al.; Senniger Powers LLP, 100 North Broadway, 17th Floor, St. Louis, Missouri 63102 (US).

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- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

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31 March 2011

(54) Title: PRODUCTION OF ADIPIC ACID AND DERIVATIVES FROM CARBOHYDRATE-CONTAINING MATERIALS

(57) Abstract: The present invention generally relates to processes for the chemocatalytic conversion of a glucose source to an adipic acid product. The present invention includes processes for the conversion of glucose to an adipic acid product via glucaric acid or derivatives thereof. The present invention also includes processes comprising catalytic oxidation of glucose to glucaric acid or derivative thereof and processes comprising the catalytic hydrodeoxygenation of glucaric acid or derivatives thereof to an adipic acid product. The present invention also includes products produced from adipic acid product and processes for the production thereof from such adipic acid product.



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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2010/038408

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>BESSON, M.; FLECHE, G.; FUERTES, P.; GALLEZOT, P.; LAHMER, F.: "Oxidation of glucose and gluconate on Pt, Pt Bi, and Pt Au catalysts", RECUEIL DES TRAVAUX CHIMIQUES DES PAYS-BAS, vol. 115, no. 4, 1996, pages 217-221, XP008131910, ISSN: 0165-0513, DOI: 10.1002/recl.19961150405 paragraph [reaction procedure] page 219 figure 4</p>	19-31, 54,55,57
Y	<p align="center">-----</p> <p>ABBADI, A.; VAN BEKKUM, H.: "Effect of pH in the Pt-catalyzed oxidation of D-glucose to D-gluconic acid", JOURNAL OF MOLECULAR CATALYSIS A: CHEMICAL, vol. 97, 1995, pages 111-118, XP002617660, ISSN: 1381-1169, DOI: 10.1016/1381-1169(94)00078-6 paragraph [02.3]; table 1</p>	19-31, 54,55,57
A	<p align="center">-----</p> <p>US 5 772 013 A (KUNZ MARKWART [DE] ET AL) 30 June 1998 (1998-06-30) example 1</p>	19-31, 54,55,57
A	<p align="center">-----</p> <p>US 3 607 922 A (ACRES GARRY J K ET AL) 21 September 1971 (1971-09-21) example 5</p> <p align="center">-----</p>	19-31, 54,55,57

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2010/038408

Box No. 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 No. 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 fees, this Authority did not invite payment of additional fees.
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 and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- 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: 1-18, 32-53, 56, 58(completely); 54, 55(partially)

Process for the production of adipic acid from glucaric acid

2. claims: 19-31, 57(completely); 54, 55(partially)

Process for the production of glucaric acid from glucose

INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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