



(51) International Patent Classification:

C12P 19/02 (2006.01) C12P 19/14 (2006.01)
C12P 19/04 (2006.01) C12P 7/06 (2006.01)

(21) International Application Number:

PCT/US2011/060696

(22) International Filing Date:

15 November 2011 (15.11.2011)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/415,572 19 November 2010 (19.11.2010) US

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available):

ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

Published:

— 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))
— with sequence listing part of description (Rule 5.2(a))

(88) Date of publication of the international search report:

17 October 2013

(54) Title: PROCESS FOR PRODUCING A FERMENTATION PRODUCT IN THE PRESENCE OF AN AMINO ACID OXIDASE, AN ARGINASE AND/OR AN ASPARAGINASE

(57) Abstract: The invention relates to a process of producing a fermentation product, comprising: liquefying a starch-containing material to dextrins with an alpha-amylase in the presence of an asparaginase and/or an amino acid oxidase; saccharifying the dextrins to a sugar with a glucoamylase; and fermenting the sugar using a fermenting organism.



WO 2012/068047 A3

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2011/060696

A. CLASSIFICATION OF SUBJECT MATTER
 INV. C12P19/02 C12P19/04 C12P19/14 C12P7/06
 ADD.
 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)
 C12P C13B A21D A23L
 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 practicable, search terms used)
 EPO-Internal, WPI Data, COMPENDEX, FSTA, BIOSIS, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E	WO 2012/018775 A1 (NOVOZYMES NORTH AMERICA, INC.) 9 February 2012 (2012-02-09) page 1, line 33 - page 2, line 9 page 4, line 10 - line 15 page 11, line 16 - line 31 page 19, line 26 - line 34 page 20, line 6 - line 8 page 31 - page 33, paragraphs 1-3, 7, 10, 13-15, 22, 25 page 34 - page 35; claims 1, 2, 4, 6-8, 13, 15	1,4,5,9, 12-14,21
A	WO 2010/022045 A1 (NOVOZYMES A/S) 25 February 2010 (2010-02-25) page 4, line 27 - page 5, line 8 page 12, line 20 - page 14, line 9 page 22; claims 1-7	1-14,21
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Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"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</p> <p>"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</p> <p>"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</p> <p>"&" document member of the same patent family</p>
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Date of the actual completion of the international search 5 June 2013	Date of mailing of the international search report 03/09/2013
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Fuchs, Ulrike
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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2011/060696

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2010/080408 A2 (NOVOZYMES, INC.) 15 July 2010 (2010-07-15) page 2, line 7 - line 20 page 14, line 37 - page 15, line 7 page 41, line 16 - line 32 -----	1-14,21
A	WO 2005/074716 A1 (KONINKLIJKE COÖPERATIE COSUN U.A.) 18 August 2005 (2005-08-18) page 1, line 1 - page 2, line 3 page 3, line 7 - page 4, line 9 page 11, line 1 - page 13, line 23 page 20; claims 13, 14 -----	1-14,21

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2011/060696

Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.c of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:
 - a. (means)
 - on paper
 - in electronic form
 - b. (time)
 - in the international application as filed
 - together with the international application in electronic form
 - subsequently to this Authority for the purpose of search
2. In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
3. Additional comments:

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2011/060696

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.:

1-14, 21

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: 1-14, 21

process for producing a fermentation product, a sugar, or a dextrin from starch-containing material involving an alpha amylase and an amino acid oxidase, an arginase and/or an asparaginase;
composition comprising a) an amino acid oxidase, an arginase and/or an asparaginase, b) a glucoamylase and c) an alpha-amylase.

2. claims: 15-20

process for producing a fermentation product, a sugar, or sucrose from a plant extract containing amino acid(s) and soluble sugar(s) involving an amino acid oxidase, an arginase and/or an asparaginase.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/US2011/060696

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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		CN 103140586 A	05-06-2013
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		EP 2326723 A1	01-06-2011
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		EP 2379732 A2	26-10-2011
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		WO 2010080408 A2	15-07-2010

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		EP 1713351 A1	25-10-2006
		US 2007275153 A1	29-11-2007
		WO 2005074716 A1	18-08-2005
