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NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG,  
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(54) Title: POLYPEPTIDES HAVING ENDOGLUCANASE ACTIVITY AND POLYNUCLEOTIDES ENCODING SAME

(57) Abstract: The present invention relates to isolated polypeptides having endoglucanase activity and isolated polynucleotides encoding the polypeptides. The invention also relates to nucleic acid constructs, vectors, and host cells comprising the polynucleotides as well as methods of producing and using the polypeptides.

# INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2008/085395

**A. CLASSIFICATION OF SUBJECT MATTER**  
 INV. C12N9/42 C12P7/10 C12N15/82

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)  
 C12N

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, Sequence Search, BIOSIS, EMBASE

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2005/074647 A (NOVOZYMES INC [US]) 18 August 2005 (2005-08-18) page 48, lines 22-34 - page 49; claim 1- page 49, lines 18-25; claims 1-73; example 12	1,5-12, 18-20
X	----- WO 2007/115201 A (NOVOZYMES INC [US]; NOVOZYMES AS [DK]; HARRIS PAUL [US]; VLASENKO ELEN) 11 October 2007 (2007-10-11) claims 1-53 examples 1-10 -----	1,5-14, 18-20
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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 document but 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	*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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Date of the actual completion of the International search  <b>19 August 2009</b>	Date of mailing of the International search report  <b>26/11/2009</b>
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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  <b>Huber, Angelika</b>
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## INTERNATIONAL SEARCH REPORT

International application No

PCT/US2008/085395

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>KVESITADZE E G ET AL: "ISOLATION AND PROPERTIES OF A THERMOSTABLE ENDOGLUCANASE FROM A THERMOPHILIC MUTANT STRAIN OF THIELAVIA TERRESTRIS" APPLIED BIOCHEMISTRY AND BIOTECHNOLOGY, HUMANA PRESS, INC, US, vol. 50, no. 2, 1 January 1995 (1995-01-01), pages 137-143, XP009006005 ISSN: 0273-2289 cited in the application the whole document</p> <p>-----</p>	1,8
X	<p>GILBERT M ET AL: "CHARACTERIZATION OF THE ENZYMES PRESENT IN THE CELLULASE SYSTEM OF THIELAVIA TERRESTRIS 255B" BIORESOURCE TECHNOLOGY, ELSEVIER, GB, vol. 39, no. 2, 1 January 1992 (1992-01-01), pages 147-153, XP009005952 ISSN: 0960-8524 cited in the application the whole document</p> <p>-----</p>	1,8

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2008/085395

## 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.:

see additional sheet(s)

### 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.

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-14, 18-20 (all partially)

Polypeptide having endoglucanase activity comprising an amino acid sequence having at least 60% identity to the mature polypeptide of SEQ ID NO: 2, nucleic acid encoding said polypeptide, method of producing the polypeptide, method of producing a mutant of a parent cell, transgenic plant transformed with the polypeptide, dsRNA molecule comprising a subsequence of the nucleic acid, method of inhibiting the expression of the polypeptide, method of degrading or converting cellulosic material, method of producing a fermentation product.

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2. claims: 1-14, 18-20 (all partially)

as invention (1), but directed to an endoglucanase having at least 60% identity to SEQ ID NO: 4.

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3. claims: 15-17

Nucleic acid construct comprising a gene encoding a protein operably linked a nucleotide sequence encoding the signal peptide of either SEQ ID NO: 2 or 4, wherein the gene is foreign to the nucleotide sequence

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2008/085395

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
WO 2005074647	A	18-08-2005	CN	1980953 A		13-06-2007
			EP	1713825 A2		25-10-2006
WO 2007115201	A	11-10-2007	CN	101460616 A		17-06-2009
			EP	2004817 A2		24-12-2008