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10 August 2006

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.

(54) Title: FUNGAL PROMOTERS FOR EXPRESSING A GENE IN A FUNGAL CELL

(57) Abstract: The present invention relates to isolated fungal promoter DNA sequences, to DNA constructs, vectors, and fungal host cells comprising these promoters in operative association with coding sequences encoding polypeptides. The present invention also relates to methods for expressing a gene and/or producing a polypeptide using the new promoters isolated. The present invention also relates to methods for altering the transcription level and/or regulation of an endogenous gene using the new promoter of the invention.



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## INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2005/051696

A. CLASSIFICATION OF SUBJECT MATTER  
INV. C12N15/80 C07K14/47

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 C07K

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, BIOSIS, Sequence Search, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KITAMOTO N ET AL: "Utilization of the TEF1-alpha gene (TEF1) promoter for expression of polygalacturonase genes, pgaA and pgaB, in Aspergillus oryzae" APPLIED MICROBIOLOGY AND BIOTECHNOLOGY, vol. 50, no. 1, July 1998 (1998-07), pages 85-92, XP002359962 ISSN: 0175-7598 the whole document ----- -/--	1-4

☒ 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.

"&amp;" document member of the same patent family

Date of the actual completion of the international search

20 December 2005

Date of mailing of the international search report

18. 05. 2006

Name and mailing address of the ISA/

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## INTERNATIONAL SEARCH REPORT

International application No  
PCT/EP2005/051696

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>FOWLER TIMOTHY ET AL: "The catR gene encoding a catalase from <i>Aspergillus niger</i>: Primary structure and elevated expression through increased gene copy number and use of a strong promoter"</p> <p>MOLECULAR MICROBIOLOGY, vol. 9, no. 5, 1993, pages 989-998, XP002041427 ISSN: 0950-382X cited in the application the whole document</p> <p>-----</p>	1-8
A	<p>WO 99/32617 A (DSM N.V; VAN DEN BRINK, JOHANNES, MAARTEN; SELTEN, GERARD, CORNELIS, M) 1 July 1999 (1999-07-01) cited in the application page 26, line 20 - page 27, line 23 figure 1</p> <p>-----</p>	
A	<p>DATABASE EMBL 20 September 2000 (2000-09-20), A. TSANG ET AL: "an 2027 <i>Aspergillus niger</i>, pYES (XhoI-EcoRI) <i>Aspergillus niger</i> cDNA clone 2027 3', mRNA sequence"</p> <p>XP002359964 retrieved from EBI, HINXTON, UK Database accession no. BE760662 abstract</p> <p>-----</p>	1
A	<p>ROBERTS I N ET AL: "EXPRESSION OF THE ESCHERICHIA COLI BETA-GLUCURONIDASE GENE IN INDUSTRIAL AND PHYTOPATHOGENIC FILAMENTOUS FUNGI"</p> <p>CURRENT GENETICS, NEW YORK, NY, US, vol. 15, no. 3, March 1989 (1989-03), pages 177-180, XP000995365 ISSN: 0172-8083 cited in the application the whole document</p> <p>-----</p>	1-8
A	<p>PUNT P J ET AL: "INTRACELLULAR AND EXTRACELLULAR PRODUCTION OF PROTEINS IN ASPERGILLUS UNDER THE CONTROL OF EXPRESSION SIGNALS OF THE HIGHLY EXPRESSED ASPERGILLUS-NIDULANS GPD-A GENE"</p> <p>JOURNAL OF BIOTECHNOLOGY, vol. 17, no. 1, 1991, pages 19-33, XP002360233 ISSN: 0168-1656 the whole document</p> <p>-----</p>	1-8

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# INTERNATIONAL SEARCH REPORT

International application No  
PCT/EP2005/051696

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>VERDOES JAN C ET AL: "The effect of multiple copies of the upstream region on expression of the Aspergillus niger glucoamylase-encoding gene"</p> <p>GENE: AN INTERNATIONAL JOURNAL ON GENES AND GENOMES, ELSEVIER, AMSTERDAM, NL, vol. 145, no. 2, 1994, pages 179-187, XP002194429</p> <p>ISSN: 0378-1119</p> <p>the whole document</p> <p>-----</p>	1-8

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/EP2005/051696

## Box 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 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 fee, this Authority did not invite payment of any additional fee.
  
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.:

1-8 all partially

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ 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: 1-8 all partially

A promotor DNA sequence selected from the sequence ID no.1.  
A DNA construct comprising said promotor DNA sequence , a  
host cell, a method of production of a polypeptide , method  
of production of a secondary metabolite.

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2. claims: 1-8 all partially

A promotor DNA sequence selected from the sequence ID no.2.  
A DNA construct comprising said promotor DNA sequence , a  
host cell, a method of production of a polypeptide , method  
of production of a secondary metabolite.

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3. claims: 1-8 all partially

A promotor DNA sequence selected from the sequence ID no.3.  
A DNA construct comprising said promotor DNA sequence , a  
host cell, a method of production of a polypeptide , method  
of production of a secondary metabolite.

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4. claims: 1-8 all partially

A promotor DNA sequence selected from the sequence ID no.4.  
A DNA construct comprising said promotor DNA sequence , a  
host cell, a method of production of a polypeptide , method  
of production of a secondary metabolite.

---

5. claims: 1-8 all partially

A promotor DNA sequence selected from the sequence ID no.5.  
A DNA construct comprising said promotor DNA sequence , a  
host cell, a method of production of a polypeptide , method  
of production of a secondary metabolite.

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2005/051696

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
W0 9932617	A	01-07-1999	AU 736111 B2 26-07-2001
			AU 2515199 A 12-07-1999
			BR 9814404 A 10-10-2000
			CA 2313445 A1 01-07-1999
			CN 1283227 A 07-02-2001
			JP 2002509698 T 02-04-2002
			JP 2005261438 A 29-09-2005
			PL 341760 A1 07-05-2001
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