(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
20 July 2006 (20.07.2006)

PCT

(10) International Publication Number
WO 2006/076189 A3

(51) International Patent Classification:
C07K 14/415 (2006.01) *A01H 5/00* (2006.01)
C12N 15/82 (2006.01)

(21) International Application Number:
PCT/US2006/000153

(22) International Filing Date: 6 January 2006 (06.01.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/643,720 13 January 2005 (13.01.2005) US

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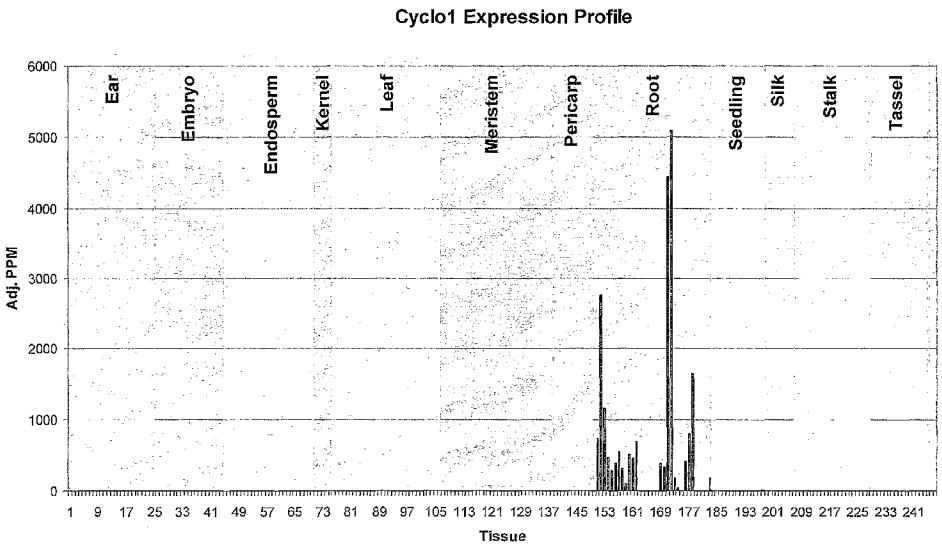
(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

[Continued on next page]

(54) **Title:** MAIZE CYCLO1 GENE AND PROMOTER



(57) **Abstract:** The present invention provides compositions and methods for regulating expression of heterologous nucleotide sequences in a plant. Compositions include a novel nucleotide sequence for a root-preferred promoter for the gene encoding Cyclo1. A method for expressing a heterologous nucleotide sequence in a plant using the promoter sequences disclosed herein is provided. The method comprises stabling incorporating into the genome of a plant cell a nucleotide sequence operably linked to the root-preferred promoter of the present invention and regenerating a stably transformed plant that expresses the nucleotide sequence. The present invention also relates to isolated nucleic acids encoding plant cyclotides. The invention relates to the construction of a chimeric gene encoding all or a portion of the plant cyclotides, in sense or antisense orientation, wherein expression of the chimeric gene results in the production of altered levels of plant cyclotides in a transformed host cell.

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— *with (an) indication(s) in relation to deposited biological material furnished under Rule 13bis separately from the description*

(88) Date of publication of the international search report:
22 February 2007

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.

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2006/000153

A. CLASSIFICATION OF SUBJECT MATTER
INV. C07K14/415 C12N15/82 A01H5/00

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)
C07K C12N A01H

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, EMBL, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE EMBL [Online] 19 March 2003 (2003-03-19), "PUFJI93TD ZM_0.6_1.0_KB Zea mays genomic clone ZMMBTa356P17, DNA sequence." XP002390493 retrieved from EBI accession no. EM_PRO:BZ785735 Database accession no. BZ785735 the whole document ----- -/--	1-3

[X] Further documents are listed in the continuation of Box C.

[X] 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

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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

Date of the actual completion of the international search	Date of mailing of the international search report
17 July 2006	- 5. 09. 2006

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Bucka, A

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2006/000153

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE EMBL [Online] 30 August 2003 (2003-08-30), "OG2BU79TH ZM_0.7_1.5_KB Zea mays genomic clone ZMMBMa0757N13, genomic survey sequence." XP002390494 retrieved from EBI accession no. EM_PRO:CG363034 Database accession no. CG363034 the whole document	1-3
A	US 5 837 848 A (ELY ET AL) 17 November 1998 (1998-11-17) figure 5	1-24
A	WO 03/040322 A (SYNGENTA PARTICIPATIONS AG; MILLIGAN, STEPHEN, B; SKALLA, DALE; LAWTON) 15 May 2003 (2003-05-15) example 7; sequences 1-4	1-24
A	WO 2004/013169 A (BAYER BIOSCIENCE N.V) 12 February 2004 (2004-02-12) examples 4,5; sequences 1-3	1-24
A	WO 00/53763 A (PIONEER HI-BRED INTERNATIONAL, INC; RITCHIE, STEVEN, W) 14 September 2000 (2000-09-14) example 5; sequence 1	1-24
A	WO 01/27147 A (THE UNIVERSITY OF QUEENSLAND; CRAIK, DAVID, JAMES; DALY, NORELLE, LEE;) 19 April 2001 (2001-04-19) figures 2-4; example 2; table 5	
A	WO 01/34829 A (THE UNIVERSITY OF QUEENSLAND; LATROBE UNIVERSITY; CRAIK, DAVID, JAMES;) 17 May 2001 (2001-05-17) figures 8,9; examples 11,12	
A	TRABI M CRAIK D J: "Circular proteins - no end in sight" TRENDS IN BIOCHEMICAL SCIENCES, ELSEVIER, HAYWARDS, GB, vol. 27, no. 3, 1 March 2002 (2002-03-01), pages 132-138, XP004343536 ISSN: 0968-0004 the whole document	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2006/000153

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.:

1-24

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: 1-24

An isolated nucleic acid molecule comprising a nucleotide sequence having at least 95% sequence identity to the sequence set forth in SEQ ID N0: 1, wherein said sequence initiates transcription in the plant cell,
DNA constructs comprising said nucleic acid, plants comprising said constructs,
uses thereof

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2. claims: 25-40

An isolated nucleic acid molecule comprising a nucleotide sequence selected from the group consisting of: (a) a nucleotide sequence set forth in SEQ ID NO: 11; (b) a nucleotide sequence that encodes a polypeptide having the amino acid sequence set forth in SEQ ID NO: 12 or 13,
DNA constructs comprising said nucleic acid, plants comprising said constructs,
uses thereof

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2006/000153

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