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Published:

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- 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))

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12 November 2009



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(54) Title: DROUGHT AND HEAT TOLERANCE IN PLANTS

(57) Abstract: Methods and materials for modulating heat and/or drought tolerance in plants are disclosed. For example, nucleic acids encoding heat and/or drought-tolerance polypeptides are disclosed as well as methods for using such nucleic acids to transform plant cells. Also disclosed are plants having increased heat and/or drought tolerance and plant products produced from plants having increased heat and/or drought tolerance.

A. CLASSIFICATION OF SUBJECT MATTER*C12N 15/29(2006.01)i, C12N 15/63(2006.01)i, A01H 1/00(2006.01)i*

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)

IPC: C12N 15/29, C12N 15/63, A01H 1/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Utility models and applications for Utility models since 1975

Japanese Utility models and applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

KOMPASS (KIPO internal) & keywords: heat tolerance, drought tolerance

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2003-0009784 A1 (LEBEL, E. G. et al.) 09 January 2003. See paragraph 122 - paragraph 292; and claims 1-3.	1-33
A	VOGEL, G. et al., 'Trehalose-6-phosphate phosphatase from Arabidopsis thaliana: identification by functional complementation of the yeast tps2 mutant.', The plant Journal, 1998, vol. 13, no. 5, pages 673-683. See entire document.	1-33
A	JANG, I. C. et al., 'Expression of a bifunctional fusion of the Escherichia coli genes for trehalose-6-phosphate synthase and trehalose-6-phosphate phosphatase in transgenic rice plants increases trehalose accumulation and abiotic stress tolerance without stunting growth.', Plant Physiology, 2003, vol. 131, pages 516-524. See abstract; and pages 519-520.	1-33
A	WO 2005-002326 A2 (AGRINOMICS LLC) 13 January 2005. See entire document.	1-33
A	US 2005-0086718 A1 (MENDEL BIOTECHNOLOGY, INC.) 21 April 2005. See entire document.	1-33

 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 application or patent 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

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2009/034068

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

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of :

a. type of material

a sequence listing

table(s) related to the sequence listing

b. format of material

on paper

in electronic form

c. time of filing/furnishing

contained in the international application as filed

filed together with the international application in electronic form

furnished subsequently to this Authority for the purposes 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

Information on patent family members

International application No.

PCT/US2009/034068

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2003-0009784 A1	09.01.2003	US 2004-0078848 A1 US 06686516 B2 US 07030294 B2	22.04.2004 03.02.2004 18.04.2006
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