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(71) Applicant (for all designated States except US): **BASF PLANT SCIENCE GMBH** [DE/DE]; Carl-Bosch-Strasse 38, 67056 Ludwigshafen (DE).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **AMBER, Shirley** [US/US]; 2832 Kimmon Way, Wake Forest, NC 27587 (US).

(74) Agent: **FITZNER, Uwe**; Hauser Ring 10, 40878 Ratingen (DE).

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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: PROTEINS ASSOCIATED WITH ABIOTIC STRESS RESPONSE AND HOMOLOGS

(57) Abstract: This invention relates generally to nucleic acid sequences encoding proteins and homologs that are associated with abiotic stress responses and abiotic stress tolerance in plants. In particular, this invention relates to nucleic acid sequences encoding proteins that confer drought, heat, cold, and/or salt tolerance to plants.



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INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2007/052274

A. CLASSIFICATION OF SUBJECT MATTER
INV. C12N15/82 C07K14/195 C07K14/37 C07K14/405 C07K14/415
C07K14/435 C07K14/705 A01H5/00 A01H5/10

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, BIOSIS, EMBASE, Sequence Search

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2004/092398 A (BASF PLANT SCIENCE GMBH [DE]; PUZIO PIOTR [DE]; CHARDONNENS AGNES [DE]) 28 October 2004 (2004-10-28) See SEQ ID NOs: 247 and 248 page 1 - page 139; claims page SEQL587 - page SEQL590	1-27
X	DATABASE EMBL [Online] 26 January 2004 (2004-01-26), "Escherichia coli DH5alpha Na+/H+ antiporter A (nhaA) mRNA, complete cds." XP002449700 retrieved from EBI accession no. EMBL:AY449719 Database accession no. AY449719 the whole document	10-16, 24,25

☒ 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

Date of the actual completion of the international search

6 September 2007

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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, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Oderwald, Harald

INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2007/052274

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 02/16423 A (BASF PLANT SCIENCE GMBH [DE]; DA COSTA E SILVA OSWALDO [US]; ISHITANI) 28 February 2002 (2002-02-28) page 1 - page 186; claims -----	1-27

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2007/052274

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.:

1-27 (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:

Invention 1: claims 1-27 (all partially)

Transgenic plants and cells transformed with a stress-related protein (SRP with SEQ ID NO: 2)-coding nucleic acid having SEQ ID NO: 1. Seeds, nucleic acids and proteins, constructs, vectors, host cells, methods of producing transgenic plants and of modifying stress tolerance, uses of said nucleic acid.

Inventions 2-4148: 1-27(all partially

same as invention 1, but comprising protein and corresponding nucleic acid sequence in the order given in claim 1, i.e. invention 2 is limited to SEQ ID NO: 3 and 4 ..., invention 4147 is limited to SEQ ID NO: 8293 and 8294 and invention 4148 is limited to SEQ ID NO: 8297.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2007/052274

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2004092398 A	28-10-2004	AU 2004230490 A1 BR PI0409442 A CA 2521754 A1	28-10-2004 18-04-2006 28-10-2004
WO 0216423 A	28-02-2002	AT 342984 T AU 8840401 A CA 2420413 A1 DE 60124000 T2 EP 1339849 A2 US 2004040054 A1	15-11-2006 04-03-2002 28-02-2002 28-06-2007 03-09-2003 26-02-2004