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(54) Title: PLANTS HAVING ENHANCED YIELD-RELATED TRAITS AND A METHOD FOR MAKING THE SAME

(57) Abstract: The present invention relates generally to the field of molecular biology and concerns a method for enhancing various yield-related traits and/or plant growth characteristics in plants by modulating expression in a plant of a nucleic acid encoding a C3H-like polypeptide, or a SPATULA-like (SPT) polypeptide, or an IDI2 (Iron Deficiency Induced 2) polypeptide, or an eIF4F-like protein complex subunit, or GR-RBP (Glycine Rich-RNA Binding Protein) polypeptide. The present invention also concerns plants having modulated expression and/or activity of a nucleic acid encoding a C3H-like polypeptide, or a SPATULA-like (SPT) polypeptide, or an IDI2 (Iron Deficiency Induced 2) polypeptide, or an eIF4F-like protein complex subunit, or GR-RBP (Glycine Rich-RNA Binding Protein) polypeptide, which plants have enhanced yield-related traits and/or plant growth characteristics relative to corresponding wild type plants or other control plants. The invention also provides constructs useful in the methods of the invention.



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INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2010/055579

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|--|-----------------------|
| X | KO J-H ET AL: "Upregulation of an Arabidopsis RING-H2 Gene, XERICO, confers drought tolerance through increased abscisic acid biosynthesis" PLANT JOURNAL, BLACKWELL SCIENCE, OXFORD, GB LNKD- DOI:10.1111/J.1365-313X.2006.02782.X, vol. 47, 1 January 2006 (2006-01-01), pages 343-355, XP008102321 ISSN: 1365-313X the whole document | 1-24 |
| X | WO 02/44389 A1 (GENOMINE INC [KR]; HWANG IN HWAN [KR]; PIAO HAI LAN [CN]) 6 June 2002 (2002-06-06) claims 1-11; figure 1 | 1-24 |
| X | US 2008/229439 A1 (LA ROSA THOMAS J [US] ET AL) 18 September 2008 (2008-09-18) paragraph [0065]; sequence 33262 | 1-24 |
| X | DATABASE EMBL [Online] 8 December 2006 (2006-12-08), "CV02020A2F05.f1 CV02-normalized library Manihot esculenta cDNA clone CV02020A2F05.f1, mRNA sequence." XP002588041 retrieved from EBI accession no. EMBL:DV456013 Database accession no. DV456013 the whole document | 1-24 |
| X,P | WO 2009/134339 A2 (MONSANTO TECHNOLOGY LLC [US]; COFFIN MARIE [US]) 5 November 2009 (2009-11-05) sequence 65140 | 1-24 |
| A | DATABASE UniProt [Online] 21 March 2006 (2006-03-21), "SubName: Full=Zinc finger, RING-type; Thioredoxin-related;" XP002588042 retrieved from EBI accession no. UNIPROT:Q2HS43 Database accession no. Q2HS43 the whole document | 1-24 |

INTERNATIONAL SEARCH REPORT

International application No.

PCT/EP2010/055579

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 and necessary to the claimed invention, the international search was carried out on the basis of:
 - a. (means)
 on paper
 in electronic form
 - b. (time)
 in the international application as filed
 together with the international application in electronic form
 subsequently to this Authority for the purpose 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

International application No.
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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.:

1-24(partially)

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.

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: 1-24(partially)

Method for enhancing yield related traits in plants using SEQ ID NOS:1 and 2; plants, constructs etc based on these sequences.

Inventions: 2-517; Claims: 1-124(partially)

Independent methods for enhancing yield related traits in plants based on each individual polypeptide with its associated nucleic acid sequence as mentioned in the tables and sequence listing, wherein claimed invention 2 concerns SEQ ID NOS: 3 and 4 and claimed invention 517 concerns SEQ ID NOS:937 and 1034. plants, constructs etc based on these sequences. The claims relating to each of these individual sequences in so far as applicable

INTERNATIONAL SEARCH REPORT

Information on patent family members

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|---|
| International application No PCT/EP2010/055579 |
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| Patent document cited in search report | Publication date | Publication date | Patent family member(s) | Publication date |
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| WO 2009134339 | A2 | 05-11-2009 | NONE | |