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(54) Title: NUCLEOTIDE SEQUENCES OF A NEW CLASS OF DIVERGED DELTA-9 STEAROYL-ACP DESATURASE GENES

(57) Abstract: An isolated nucleic acid fragment encoding a diverged delta-9 fatty acid desaturase is disclosed. Also the construction of a chimeric gene encoding all or a portion of the diverged delta-9 fatty acid desaturase is disclosed, in sense or antisense orientation, wherein expression of the chimeric gene results in production of altered levels of the diverged delta-9 fatty acid desaturase in a transformed host cell.

INTERNATIONAL SEARCH REPORT

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<p>A. CLASSIFICATION OF SUBJECT MATTER IPC 7 C12N9/02 C12N15/53 C12N15/82</p>		
<p>According to International Patent Classification (IPC) or to both national classification and IPC</p>		
<p>B. FIELDS SEARCHED</p>		
<p>Minimum documentation searched (classification system followed by classification symbols) IPC 7 C12N</p>		
<p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched</p>		
<p>Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, BIOSIS, EMBL, GENSEQ</p>		
<p>C. DOCUMENTS CONSIDERED TO BE RELEVANT</p>		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	SWIDERSKI MICHAL R ET AL: "Identification of new nodulin cDNAs from yellow lupine by differential display." PLANT SCIENCE (SHANNON), vol. 151, no. 1, 7 February 2000 (2000-02-07), pages 75-83, XP002194881 ISSN: 0168-9452	12
A	page 78, right-hand column, paragraph 1 page 81, right-hand column, paragraph 3 figure 2 --- -/--	1-11,14, 15
<p><input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex.</p>		
<p>° Special categories of cited documents :</p>		
<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p>		<p>"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</p>
<p>"E" earlier document but published on or after the international filing date</p>		<p>"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</p>
<p>"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)</p>		<p>"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.</p>
<p>"O" document referring to an oral disclosure, use, exhibition or other means</p>		<p>"&" document member of the same patent family</p>
<p>"P" document published prior to the international filing date but later than the priority date claimed</p>		
<p>Date of the actual completion of the international search 3 April 2002</p>		<p>Date of mailing of the international search report 31. 07. 2002</p>
<p>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</p>		<p>Authorized officer ALCONADA RODRIG..., A</p>

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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>CAHOON EDGAR B ET AL: "Characterization of a structurally and functionally diverged acyl-acyl carrier protein desaturase from milkweed seed." PLANT MOLECULAR BIOLOGY, vol. 33, no. 6, 1997, pages 1105-1110, XP002194882 ISSN: 0167-4412 the whole document</p> <p style="text-align: center;">---</p>	1-15
A	<p>DATABASE EMBL [Online] 25 January 1999 (1999-01-25) FEDERSPIEL,N.A. ET AL.: "Arabidopsis thaliana chromosome I BAC F28H19 genomic sequence" XP002194883 Accession AC006423</p> <p style="text-align: center;">---</p>	1-15
E	<p>WO 02 00904 A (GLASSMAN KIMBERLY F ;GORDON KAMM WILLIAM J (US); PIONEER HI BRED I) 3 January 2002 (2002-01-03) page 11, line 17-20 example 9 SEQ ID NO:24</p> <p style="text-align: center;">-----</p>	1-15

INTERNATIONAL SEARCH REPORT

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Box I Observations where certain claims were found unsearchable (Continuation of item 1 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 II Observations where unity of invention is lacking (Continuation of item 2 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.:

1-15 (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: 1-15 (partially)

Polynucleotide derived from soybean having the sequence of SEQ ID NO:1 encoding for a polypeptide having delta-9 fatty acid desaturase and having at least 80% identity with the polypeptide of SEQ ID NO:2; chimeric constructs and host cells comprising the polynucleotide of the invention; method of obtaining a nucleic acid fragment by probing a library with the polynucleotide of the invention; method of identifying a delta-9 fatty acid desaturase or the polynucleotide encoding said polypeptide by determining the sequence and identifying therein certain amino acid sequences; method of altering the level of expression of a delta-9 fatty acid desaturase by transforming a host cell with the chimeric gene or construct of the invention.

2. Claims: 1-15 (partially)

As invention 1, but referring to the polynucleotides from corn having the sequences of SEQ ID NO: 5 and 11 and to the polypeptide from rice having the sequence of SEQ ID NO:15 which code, respectively, for the polypeptides of SEQ ID NO: 6, 12 and 16.

3. Claims: 1-15 (partially)

As invention 1, but referring to the polynucleotides from corn having the sequences of SEQ ID NO: 3 and 9 which code, respectively, for the polypeptides of SEQ ID NO:4 and 10.

4. Claims: 1-15 (partially)

As invention 1, but referring to a polynucleotides from rice having the sequences of SEQ ID NO: 7 and 13, which code, respectively, for the polypeptides of SEQ ID NO: 8 and 14.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/26246

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
WO 0200904	A	03-01-2002	AU	7297701 A	08-01-2002
			WO	0200904 A2	03-01-2002
