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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, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, 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.

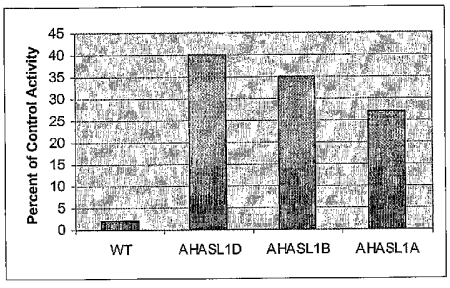
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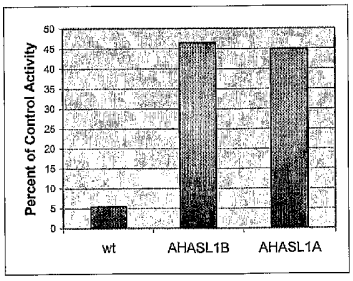
(54) Title: POLYNUCLEOTIDES ENCODING MATURE AHASL PROTEINS FOR CREATING IMIDAZOLINONE-TOLERANT PLANTS

(57) Abstract: Isolated polynucleotide molecules that encode mature, wild-type and imidazolinone-tolerant acetohydroxyacid synthase large subunit (AHASL) polypeptides, and the amino acid sequences encoding these polypeptides, are described. Expression cassettes and transformation vectors comprising the polynucleotide molecules of the invention, as well as plants and host cells transformed with the polynucleotide molecules, expression cassettes, and transformation vectors, are described. Methods of using the polynucleotide molecules to enhance the resistance of plants to herbicides, and methods for controlling weeds in the vicinity of such plants are also described.

A Hexaploid, 100mM Imazapyr



B Tetraploid, 100mM Imazamox



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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, 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).

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INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2005/021170

A. CLASSIFICATION OF SUBJECT MATTER
INV. C12N15/82 C12N15/60 C12N15/63 C12N5/04 C12N5/06
C12N1/21 C12N1/15 A01H5/02 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)
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, PAJ, 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 03/014357 A (UNIVERSITY OF SASKATCHEWAN; POZNIAK, CURTIS, J; HUCL, PIERRE) 20 February 2003 (2003-02-20) cited in the application the whole document -----	1-51
X	DATABASE EMBL [Online] 12 March 2003 (2003-03-12), "Triticum aestivum cultivar CDC Teal acetohydroxyacid synthase (imi1) gene, partial cds." XP002356634 retrieved from EBI accession no. EM_PRO:AY210405 Database accession no. AY210405 abstract ----- -/--	1-5,7-9, 47-51

[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

"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)

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"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

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
29 November 2005	31. 03. 2006
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, H

Form PCT/ISA/210 (second sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

International application No
PCT/[illegible]2005/021170

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] 12 March 2003 (2003-03-12), "Triticum aestivum cultivar TealIMI10A acetohydroxyacid synthase (imi1) gene, partial cds." XP002356635 retrieved from EBI accession no. EM_PRO:AY210407 Database accession no. AY210407 abstract -----	1-5,7-9, 47-51
A	WO 03/013225 A (NORTHWEST PLANT BREEDING COMPANY; KONZAK, CALVIN) 20 February 2003 (2003-02-20) the whole document -----	1-51

Form PCT/ISA/210 (continuation of second sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2005/021170

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.:

1-51 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:

1. claims: 1-51 (all partially)

subject-matter pertaining to SEQ ID NOs: 1, 2, 7 and 8 (AHASL1D).

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2. claims: 1-51 (all partially)

subject-matter pertaining to SEQ ID NOs: 3,4, 9 and 10 (AHASL1B).

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3. claims: 1-51 (all partially)

subject-matter pertaining to SEQ ID NOs: 5, 6, 11 and 12 (AHASL1A).

INTERNATIONAL SEARCH REPORT

ation on patent family members

International application No
PCT/[illegible]2005/021170

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 03014357 A	20-02-2003	BR 0211809 A	08-09-2004
		CA 2456314 A1	20-02-2003
		EP 1414975 A1	06-05-2004
		MX PA04001012 A	06-06-2005
WO 03013225 A	20-02-2003	CA 2455512 A1	20-02-2003
		EP 1420629 A2	26-05-2004
		MX PA04001056 A	17-02-2005