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29 July 2004
- 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: COMPOSITIONS AND METHODS FOR IDENTIFYING PLANTS HAVING INCREASED TOLERANCE TO IMIDAZOLINONE HERBICIDES

(57) Abstract: The present invention provides compositions and methods for assaying commercially relevant imidazolinone herbicide tolerance conferred by a *Brassica napus* AHAS1 PM1 mutation and a *Brassica napus* AHAS3 PM2 mutation in a plant.

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# INTERNATIONAL SEARCH REPORT

International Application No

PCT/CA 03/01641

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 C12Q1/68

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 7 C12Q

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, 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	RUTLEDGE R G ET AL: "MOLECULAR CHARACTERIZATION AND GENETIC ORIGIN OF THE BRASSICA-NAPUS ACETOHYDROXY ACID SYNTHASE MULTIGENE FAMILY" MOLECULAR AND GENERAL GENETICS, SPRINGER VERLAG, BERLIN, DE, vol. 229, no. 1, 1991, pages 31-40, XP002008880 ISSN: 0026-8925	11
A	the whole document	1-5
Y	WO 01/92512 A (KIM JUNGSUP ;UNIV DELAWARE (US); GAMPER HOWARD B (US); KMIIEC ERIC) 6 December 2001 (2001-12-06) page 5 page 57	1-5
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Further documents are listed in the continuation of box C.

Patent family members are listed in 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

22 March 2004

Date of mailing of the international search report

08. 06. 2004

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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/CA 03/01641

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	HATTORI J ET AL: "AN ACETOHYDROXY ACID SYNTHASE MUTANT REVEALS A SINGLE SITE INVOLVED IN MULTIPLE HERBICIDE RESISTANCE" MOLECULAR AND GENERAL GENETICS, SPRINGER VERLAG, BERLIN, DE, vol. 246, 1995, pages 419-425, XP002008914 ISSN: 0026-8925 the whole document -----	1-5
Y	US 2002/138881 A1 (GINGERA GREGORY R ET AL) 26 September 2002 (2002-09-26) paragraph [0010] -----	1-5

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/CA 03/01641

## 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.:

1-5, (all completely); 11 (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: 1-5, (all completely), 11 (partially)

Invention 1

Methods (and means, namely oligonucleotides comprising a sequence selected from the group consisting of SEQ ID Nos.: 90, 91 and 93) of assaying a plant for imidazolinone herbicide resistance conferred by the combination of a PM1 mutation of a B. napus AHAS1 and a PM2 mutation of a B. napus AHAS3 gene

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2. claims: 6, 7 (all completely), 10, 11 (partially)

Invention 2

Oligonucleotide comprising a sequence corresponding to SEQ ID No. 5  
Inventions 3-45  
Ibidem for SEQ ID Nos.: 6-46, 92 and 95, respectively

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3. claims: 8, 9 (all completely), 10, 11 (partially)

Invention 46

Oligonucleotide comprising a sequence corresponding to SEQ ID No. 47  
Inventions 47-89  
Ibidem for SEQ ID Nos.: 48-88, 94 and 96, respectively

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/CA 03/01641

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
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