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- (71) Applicant (for all designated States except US): **CEN-  
TRE FOR DNA FINGERPRINTING AND DIAGNOS-  
TICS** [IN/IN]; Centre for the Department of Biotechnol-  
ogy, Ministry of Science & Technology, Government of In-  
dia, Nacharam, 500 076 Hyderabad (IN).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **NAGARAJU, Javare,  
Gowda** [IN/IN]; Centre for DNA Fingerprinting and Diag-  
nostics, Nacharam, 500 076 Hyderabad (IN).
- (74) Agent: **BHOLA, Ravi**; Kumaran & Sagar, 84-C, C6 Lane,  
Off Central Avenue, Sainik Farms, 110 062 New Delhi  
(IN).
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GQ, GW, ML, MR, NE, SN, TD, TG).
- Declaration under Rule 4.17:**  
— as to the applicant's entitlement to claim the priority of the  
earlier application (Rule 4.17(iii)) for all designations
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- (88) Date of publication of the international search report:  
25 March 2004
- For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: NOVEL FISSR-PCR PRIMERS AND METHOD OF GENOTYPING DIVERSE GENOMES OF PLANT AND ANI-  
MAL SYSTEMS INCLUDING RICE VARIETIES

(57) Abstract: The present invention relates to set of inter-simple sequence repeats (ISSR)-PCR primers of SEQ ID Nos. 1 to 37 for genotyping eukaryotes and a method of genotyping diverse genomes of plant and animal systems using FISSR-PCR primers and SSR markers; more particularly, a FISSR and SSR method of distinguishing Basmati rice varieties from Non-Basmati (NB) rice varieties, and Traditional Basmati (TB) rice varieties from Evolved Basmati (NB) rice varieties, and also, a method for determining adulteration of Basmati rice with other rice varieties and a kit thereof.



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# INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB 03/00041

**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, MEDLINE, BIOSIS, 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.
Y	<p>DAVIERWALA A P ET AL: "Use of three different marker systems to estimate genetic diversity of Indian elite rice varieties."                      GENETICA. NETHERLANDS 2000, vol. 108, no. 3, 2000, pages 269-284, XP008021041                      ISSN: 0016-6707                      the whole document</p> <p style="text-align: center;">----- -/--</p>	1-5

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 August 2003

Date of mailing of the international search report

10. 12. 2003

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

Botz, J.

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB 03/00041

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>NAGARAJU J ET AL: "FISSR-PCR: a simple and sensitive assay for highthroughput genotyping and genetic mapping." MOLECULAR AND CELLULAR PROBES. ENGLAND FEB 2002, vol. 16, no. 1, February 2002 (2002-02), pages 67-72, XP002252093 ISSN: 0890-8508 the whole document</p> <p style="text-align: center;">-----</p>	1-5
Y	<p>JOSHI S P ET AL.: "Genetic diversity and phylogenetic relationship as revealed by inter simple sequence repeat (ISSR) polymorphism in the genus Oryza" THEORETICAL AND APPLIED GENETICS, vol. 100, no. 8, June 2000 (2000-06), pages 1311-1320, XP002252094 the whole document</p> <p style="text-align: center;">-----</p>	1-5
Y	<p>BLAIR M W ET AL: "Inter-simple sequence repeat (ISSR) amplification for analysis of microsatellite motif frequency and fingerprinting in rice (Oryza sativa L.)." THEORETICAL AND APPLIED GENETICS, vol. 98, no. 5, April 1999 (1999-04), pages 780-792, XP002252095 ISSN: 0040-5752 the whole document</p> <p style="text-align: center;">-----</p>	1-5
Y	<p>TEMNYKH SVETLANA ET AL: "Computational and experimental analysis of microsatellites in rice (Oryza sativa L.): Frequency, length variation, transposon associations, and genetic marker potential." GENOME RESEARCH, vol. 11, no. 8, August 2001 (2001-08), pages 1441-1452, XP002252096 ISSN: 1088-9051 the whole document</p> <p style="text-align: center;">-----</p>	1-5
Y	<p>DATABASE GRAMENE USDA IFAFS; A comparative mapping resource for grains "http://www.gramene.org/microsat/ssr.html" XP002252097 cited in the application the whole document</p> <p style="text-align: center;">-----</p>	1-5
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# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/IB 03/00041

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>ZIETKIEWICZ E ET AL: "GENOME FINGERPRINTING BY SIMPLE SEQUENCE REPEAT (SSR)-ANCHORED POLYMERASE CHAIN REACTION AMPLIFICATION"                      GENOMICS, ACADEMIC PRESS, SAN DIEGO, US,                      vol. 20, 1994, pages 176-183, XP000569780                      ISSN: 0888-7543                      the whole document</p> <p style="text-align: center;">-----</p>	1-5

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/IB 03/00041

## 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.: 18, 19 (completely)  
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:  
see FURTHER INFORMATION sheet PCT/ISA/210
  
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 (completely)

### 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

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Continuation of Box I.2

Claims Nos.: 18, 19 (completely)

Present claims 18 and 19 relate to an extremely large number of possible products and possibilities of performing a method. In fact, the claims contain so many options, variables, possible permutations that a lack of clarity and conciseness within the meaning of Article 6 PCT arises to such an extent as to render a meaningful search of the claims impossible. The many different combinations of ISSR-PCR primers from a set of primers of sequence identity numbers 1-37 plus the many possible combinations of ISSR-PCR primers in combination with the SSR markers of Table 4 are impossible to search. In addition it is not clear which constellation / combination of primers allows the determination of adulteration of Basmati rice in comparison to other rice varieties. Consequently, the search can not be carried out for claims 18 and 19.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

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 (completely)

Invention Number 1:

A set of inter-simple sequence repeats (ISSR)-PCR primers specified by sequence identity numbers 1 - 37 for genotyping eucaryotes and its use in a method of genotyping diverse genomes of plant and animal systems using said primers;

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2. claims: 6-11 (completely)

Invention number 2:

A set of primers of sequence identity numbers 1 - 5, 7, 11, 19, 20, 25 - 27 and their use in a FISSR method of distinguishing Basmati rice varieties from Non-Basmati (NB) rice varieties as well as Traditional Basmati (TB) rice varieties from Evolved Basmati (NB) rice varieties;

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3. claims: 12, 13 (completely)

Invention number 3:

A method of genotyping diverse genomes of plant and animal systems using the SSR-PCR markers of table 3;

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4. claims: 14-17 (completely)

Invention number 4:

A set of primers of sequence identity numbers 3, 5 and 26 and its use in a method of SSR of distinguishing Basmati rice varieties from Non-Basmati (NB) rice varieties using the markers of table 4, as well as Traditional Basmati (TB) rice varieties from Evolved Basmati (NB) rice varieties using the markers of table 5;

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