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(54) Title: DNA FINGERPRINTING USING A BRANCH MIGRATION ASSAY

(57) Abstract: A method of determining the length of a polynucleotide target is provided. With this method, a target is first hybridized to an array of first probes having different, determined lengths, resulting in the formation of duplexes between the polynucleotide target and the first probes. These duplexes have a single stranded section of target if the target is longer than the first probe it is in a duplex with. Next, a second probe having a determined length is hybridized to these duplexes. If the length of the target is greater than the length of the first probe it is displaced during this hybridization step by the process of branch migration. In contrast, if the length of the target is less than or equal to the length of the first probe, it is not displaced. Thus, the length of the polynucleotide target can be determined.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/33838

A. CLASSIFICATION OF SUBJECT MATTER
 IPC: **C12Q 1/68(2006.01);C07H 21/02 AND 21/04**

 USPC: **435/6;536/23.1 AND 24.3**
 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)
 U.S. : 435/6; 536/23.1 and 24.3

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 practicable, search terms used)
 Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	RADTKEY et al. Rapid,high fidelity analysis of simple sequence repeats on an electronically active DNA microchip. Nucleic Acids Research. 2000, Vol. 28, No. 7, e17, see the entire document pages 1-7.	1-10
A	US 6,090,549 A (MIRZABEKOV et al) 18 July 2000, see the entire document.	1-10
A	US 4,766,062 (DIAMOND et al) 23 August 1988, see the entire document.	1-10
A	US 6,261,784 B1 (NADEAU et al) 17 July 2001, see the entire document.	1-10
A	US 5,753,439 A (SMITH et al) 19 May 1998, see the entire document.	1-10

Further documents are listed in the continuation of Box C. See patent family annex.

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Continuation of B. FIELDS SEARCHED Item 3:
USPATFULL AND USPG-PUBS via EAST ; Medline and Cplus via STN
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