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(54) Title: METHODS FOR THE DETECTION OF COLORECTAL CANCER

(57) Abstract: This invention relates to an approach for detection of chain truncating mutations based on the utilization of existing sample collection methods such as FOBT platforms, together with advanced methods for cell-free protein expression. "When further combined with mass spectrometry, the invention provides the ability to simultaneously detect changes in the amino acid sequence of multiple peptides. In some embodiments, DNA is isolated from a patient fecal sample and specific regions of a gene (i.e., for example, a K- ras gene or an APC gene) are PCR amplified using specifically designed primers that allow translation of encoded peptide fragments in a cell-free protein synthesis system. Nascent proteins are affinity purified and their mass is detected by MALDI-TOF which allows identifying low levels of mutations.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US06/24006

A. CLASSIFICATION OF SUBJECT MATTER

IPC: C12P 19/34(2006.01);C12Q 1/68(2006.01)

USPC: 435/6,91.2

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, 91.2

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)
EAST patents databases and STN keyword search

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	AHLQUIST et al. Colorectal Cancer Screening by Detection of Altered Human DNA in Stool: Feasibility of a Multitarget Assay Panel. Gastroenterology, 2000, Volume 119, pages 1219-1227.	1, 3-8, 11, 13-18 ----- 2, 9, 10, 12, 19, 20
A	Hemocult II Sensa Product Instructions. Beckman Coulter, Inc. October 2002.	1-20
X --- Y	US 2006/0068400 A1 (CLEATOR) 30 March 2006 (30.03.2006), throughout	1, 3, 4, 6, 7, 8, 13, 14, 16, 18 ----- 2, 5, 9-12, 15, 17, 19- 2, 12
Y	WELLS et al. Development and application of a polymerase chain reaction assay for the detection and enumeration of bile acid 7 alpha-dehydroxylating bacteria in human feces. Clinica Chimica Acta, Volume 331, pages 127-134.	



Further documents are listed in the continuation of Box C.



See patent family annex.

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"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

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International application No.
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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.
Y	GITE et al. A high-throughput nonisotopic protein truncation test. Nature Biotechnology, 2003, Volume 21, pages 194-197.	5, 9, 15, 19
Y	SOMERS et al. Validation of the Point-EXACT method in non-small cell lung carcinomas, Clinical Chemistry, 1998, Volume 44, Number 7, pages 1404-1409.	10, 20