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- Published:**
- with international search report
 - before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
 - with sequence listing part of description published separately in electronic form and available upon request from the International Bureau
- (88) Date of publication of the international search report: 9 February 2006
- 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: GENE PRODUCTS DIFFERENTIALLY EXPRESSED IN CANCEROUS COLON CELLS AND THEIR METHODS OF USE II

(57) Abstract: The present invention provides polynucleotides, as well as polypeptides encoded thereby, that are differentially expressed in colon cancer cells. These polynucleotides are useful in a variety of diagnostic and therapeutic methods. The present invention further provides methods of reducing growth of colon cancer cells. These methods are useful for treating colon cancer, in particular, metastasized colon cancer.

WO 2005/000087 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/15421

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| A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : C12Q 1/68; C12P 19/34; C07K 5/00; C07H 21/04 US CL : 435/6, 91.1, 91.2; 530/300; 536/23.1, 24.3, 24.33 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, 91.1, 91.2; 530/300; 536/23.1, 24.3, 24.33 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. |
| X | ZHUANG et al. Accession No. AF362074, Direct submission, available June 20, 2001. | 1 and 3 |
| X | WO 01/68846 A2 (ISIS INNOVATION LIMITED) 20 September 2001 (20.09.2001), SEQ ID NO: 3, page 6, lines 23-24; and page 7, lines 15-26. | 1 and 3-5 |
| X | LANFRANCHI et al. Normalization and subtraction: two approaches to facilitate gene discovery. Genome Research. September 1996, vol. 6, no. 9, pages 791-806, entire document. | 1 and 3 |
| A | HAYNES et al. Proteome analysis: Biological assay or data archive?. Electrophoresis. 1998, vol. 19, pages 1862-1871, especially pp. 1863, 2nd paragraph, and Figure 1. | 1-9 |
| <input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> 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 | "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 |
| "E" | earlier application or patent published on or after the international filing date | "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 |
| "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) | "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 |
| "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 | |
| Date of the actual completion of the international search | Date of mailing of the international search report | |
| 03 August 2005 (03.08.2005) | 23 DEC 2005 | |
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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/15421

Box No. 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 No. 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:
Please See Continuation 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.: 1-9 (in part) and SEQ ID NO: 1

Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/15421

BOX III. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claim(s) 1-9, drawn to an isolated nucleic acid, a vector comprising said isolated nucleic acid, a host cell comprising said vector, and a method of detecting cancer.

Group II, claim(s) 10, drawn to a method of inhibiting cancerous phenotype.

Group III, claim(s) 11, drawn to a method of treating a subject with cancer via administration of a pharmaceutical agent.

Group IV, claim(s) 12, drawn to an isolated antibody.

The formula employed in calculating the total number of inventions is described below:

Tot. No. of Inventions = (total no. of groups) X (total no. of SEQ ID NOS) = 4 X 9672 = 38,688 total inventions.

The inventions listed as Groups I-IV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

Inventions covered by I and IX do not share a special technical feature in that the products have different physical structures.

Additionally, 37 CFR 1.475 (b), states that claims drawn to different categories of invention will be considered to have unity of invention if the claims are drawn only to one of the following combination of categories:

- (1) A product and a process of producing the product
- (2) A product and a process of using the product
- (3) A product, process of producing the product, and a process of using the product
- (4) A process and an apparatus or means to carryout the process
- (5) A product, a process of producing the product, and an apparatus of means to carryout the process.

An application containing claims to more or less than one of the "combinations of categories" of inventions set forth above, unity of invention might not be present. (MPEP 1850).

Invention covered by Group I comprises a product, a method of producing the product, and/or method of using the product as required in 37 CFR 1.475 (b). Because the Group already include one of the above combinations, any additional categories of inventions in Groups II and III have been determined to lack unity of invention in pursuant to 37 CFR 1.475(b).

With regard to the SEQ ID Numbers, each sequences identified by its SEQ ID Number comprises a different sequence and thus, structurally unrelated, thereby lacking unity of invention.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US04/15421

Continuation of B. FIELDS SEARCHED Item 3:

Patent Databases: (PGPUB and Issued_Patent_NA)

Commercial Databases: (EST, GenEmbl, and N_Geneseq_16Dec04)

search terms: SEQ ID NO: 1, colon cancer, differential expression, vector, and host cell.