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C07H 21/02

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LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,  
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(CIP) to earlier applications:

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*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 NUCLEIC ACIDS AND POLYPEPTIDES

(57) Abstract: The present invention provides novel nucleic acids, novel polypeptide sequences encoded by these nucleic acids and  
uses thereof.

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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US00/35017

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C12Q 1/68; C07H 21/02

US CL : 435/6; 536/23.1

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

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          | Database EST, National Human Genome Institute (Bethesda, MD, USA), Accession                                                                                                               | 2-3 and 10            |
| ---        | Number AW068570, JIA et al., 'SGAP: The Skeletal Genome Anatomy Project,' 13                                                                                                               | -----                 |
| Y          | October 1999.                                                                                                                                                                              | 6-9, 11 and 19        |
| Y          | WATSON et al. The Science Used in the Recombinant DNA Industry. Recombinant DNA; A Short Course. New York. W.H. Freeman and Company. 1983, pages 231-241, Chapter 18, see entire document. | 6-9, 11 and 19        |

☐ Further documents are listed in the continuation of Box C.

☐ 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

"E" earlier application or patent 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

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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US00/35017

## Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claim 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. ☐ Claim 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:  
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.: 1-11, 19, and SEQ ID Number 1 (Claim 20 was in Group I but is not drawn to the elected sequence.)

### 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.

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### BOX II. 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) 1-11, 19, and 20, drawn to a polynucleotide, a vector comprising the polynucleotide, a host cell comprising the vector, a polypeptide, a method of producing the polypeptide, and a composition comprising the polypeptide of Group I and a carrier.

Group II, claim(s) 12, drawn to an antibody specific for the polypeptide of Group I.

Group III, claim(s) 13-15, drawn to a method of detecting the polynucleotide of Group I.

Group IV, claim(s) 16, drawn to a method of detecting the polypeptide of Group I.

Group V, claim(s) 17 and 18, drawn to a method of finding a binding partner of the polypeptide of Group I.

Group VI, claim(s) 21, drawn to a polypeptide array.

Group VII, claim(s) 22-26, drawn to an array of polynucleotides comprising the polynucleotide of Group I.

Group VIII, claim(s) 27, drawn to a method of therapeutic treatment using the polypeptide of Group I.

Group IX, claim(s) 28, drawn to a method of therapeutic treatment using an antibody.

The inventions listed as Groups I-IX 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: The polynucleotide of claim Group I lack a special technical feature because each polynucleotide is directed to a unique sequence which may give rise to a polypeptide with unique function. In addition, each additional group set forth has its own unifying feature which is distinct from that of the other. Finally, PCT Rule 13.1 and Annex B do not provide for unity of invention between two or more different products or methods of use that share a special technical feature.

In addition, each Group detailed above reads on distinct Groups drawn to multiple sequences. The sequences are distinct because they are unrelated sequences, and a further lack of unity is applied to each Group. The Applicants must further elect one sequence for examination in the elected Group detailed above. Payment of fees for an additional invention will entitle the Applicants to examination of one additional sequence.

The total number of invention was calculated based on the number of combination that exist between the SEQ ID Numbers and the total number of groups. The formula is recited below:

Total Number of Inventions found = (Total Groups X Total SEQ ID Numbers) - Total Groups

Total Number for this Application = ( 9 X 739 ) - 9 = 6642

## INTERNATIONAL SEARCH REPORT

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**Continuation of B. FIELDS SEARCHED Item 3:**

Database EST, GenEmbl, GenBank;

Search terms: SEQ ID Number 1