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[Continued on next page]

(54) Title: NUCLEIC ACIDS, PROTEINS, AND ANTIBODIES

(57) Abstract:

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Previous Correction:
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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.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US01/01308

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C12N 15/00; C07K 1/00
US CL : 435/69.1; 530/350

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. : 435/69.1, 530/350

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
435/320.1

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
DNA and amino acid sequence search using sequence databases such as GenEmbl and SwissProt. Inventor search in WEST

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y,P	Database GenEmbl Accession No. AC010896, WATERSTON, R.H. The sequence of the Homo sapiens clone. 22 December 2000. Direct Submission. DNA is 71.7%	1-12,14-16
Y,P	Database GenEmbl Accession No. AC010896, WATERSTON, R.H. The sequence of the Homo sapiens clone. Direct Submission. 22 December 2000. DNA is 71.7% homologous to nucleic acid (SEQ ID NO:11) claimed in instant application.	1-12,14-16

☐ 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	Date of mailing of the international search report
11 July 2001 (11.07.2001)	30 AUG 2001
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703)305-3230	Authorized officer Regina M. DeBerry Telephone No. (703) 3[illegible]

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Form PCT/ISA/210 (second sheet) (July 1998)

INTERNATIONAL SEARCH REPORT

Intern...nal application No.

PCT/US01/01308

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.: Claims 1-12, 14-16 and SEQ ID NO:11 (X) and SEQ ID NO:237 (Y).

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 . cation No.

PCT/US01/01308

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) 1-12,14-16, drawn to an isolated nucleic acid of SEQ ID NO: X, vector, host cell, a method of making a recombinant host cell, an isolated polypeptide of SEQ ID NO: Y, and a method of making an isolated polypeptide. Applicant is required to elect only one SEQ ID NO: X and one SEQ ID NO: Y, wherein X and Y are values that correlate to those listed in Table 1A and correspond to one of the cDNA Clone IDs, respectively. For example, if SEQ ID NO:11 is elected for X, this correlates with SEQ ID NO:237 of Y with clone ID NO: HTEHS19.

Group II, claim(s) 13, drawn to an isolated antibody which binds to a peptide of SEQ ID NO: Y in claim 1. Applicant is required to elect only one SEQ ID NO: Y, wherein Y is a value that correlates to those listed in Table 1A and corresponds to one of the cDNA Clone IDs, respectively. For example if SEQ ID NO:238 of Y is elected, this correlates with clone ID NO: HCFAT05

Group III, claim(s) 17, drawn to a method for preventing, treating, or ameliorating a medical condition, comprising administering to a mammalian subject a therapeutically effective amount of the polynucleotide of SEQ ID NO: X in claim 1. Applicant is required to elect only one SEQ ID NO: X, wherein X is a value that correlates to those listed in Table 1A and corresponds to one of the cDNA Clone IDs, respectively. For example, if SEQ ID NO:13 of X is elected, this correlates with clone ID NO: HMSKF13.

Group IV, claim(s) 18, drawn to a method of diagnosing a pathological condition or a susceptibility to a pathological condition in a subject comprising determining the presence or absence of a mutation in the polynucleotide of SEQ ID NO: X in claim 1. Applicant is required to elect only one SEQ ID NO: X, wherein X is a value that correlates to one of those listed in Table 1A and corresponds to one of the cDNA Clone IDs, respectively. For example, if SEQ ID NO:14 of X is elected, this correlates with clone ID NO: HLHCT68.

Group V, claim(s) 19, drawn to a method of diagnosing a pathological condition or a susceptibility to a pathological condition in a subject comprising determining the presence or amount of expression of the polypeptide of SEQ ID NO: Y in claim 11 in a biological sample. Applicant is required to elect only one SEQ ID NO: Y, wherein Y is a value that correlates to one of those listed in Table 1A and corresponds to one of the cDNA Clone IDs, respectively. For example, if SEQ ID NO:241 of Y is elected, this correlates with clone ID NO: HTLAQ18.

Group VI, claim(s) 20, drawn to a method for identifying a binding partner to the polypeptide of SEQ ID NO: Y in claim 11. Applicant is required to elect only one SEQ ID NO: Y, wherein Y is a value that correlates to one of those listed in Table 1A and corresponds to one of the cDNA Clone IDs, respectively. For example, if SEQ ID NO:242 of Y is elected, this correlates with clone ID NO: HEQAY32.

Group VII, claim(s) 21, drawn to the gene corresponding to the cDNA sequence of SEQ ID NO:Y. Applicant is required to elect only one SEQ ID NO: Y, wherein Y is a value that correlates to one of those listed in Table 1A and corresponds to one of the cDNA Clone IDs, respectively. For example, if SEQ ID NO:243 of Y is elected, this correlates with clone ID NO: HSSJM44.

Group VIII, claim(s) 22,23 drawn to a method of identifying an activity in a biological assay, wherein the method comprises expressing SEQ ID NO: X in a cell, identifying the protein in the supernatant having the activity and the product produced. Applicant is required to elect only one SEQ ID NO: X, wherein X is a value that correlates to one of those listed in Table 1A and corresponds to one of the cDNA Clone IDs, respectively. For example, if SEQ ID NO:18 of X is elected, this correlates with clone ID NO: HAHEF22.

Group IX, claim(s) 24, drawn to a method for preventing, treating, or ameliorating a medical condition, comprising administering to a mammalian subject a therapeutically effective amount of the polypeptide of SEQ ID NO: Y in claim 11. Applicant is required to elect only one SEQ ID NO: Y, wherein Y is a value that correlates to one of those listed in Table 1A and corresponds to one of the cDNA Clone IDs, respectively. For example, if SEQ ID NO:245 of Y is elected, this correlates with clone ID NO: HCEOR02.

The inventions listed above do not relate to a single inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical feature for the following reasons: The products including the polynucleotides and polypeptides in Table 1A and the gene in Group VII are composed of different coding regions, different sequences and/or impart structural and functional differences and thus do not share a common special technical feature. Furthermore, the antibody of Group II does not share a common special technical feature with the products of Table 1A or Group VII. Although the antiboby can be used to obtain polypeptides, it can also be used in diagnostic methods. Groups III,IV,V,VI,VIII and IX do not share a special technical feature. These groups are directed to methods that produce different products, recite different elements, and /or acheive different goals. Furthermore, PCT rules do not provide for examination of multiple methods of using the first claimed product.