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[Continued on next page]

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

(57) Abstract: The present invention relates to novel kidney related polynucleotides and the polypeptides encoded by these polynucleotides herein collectively known as "kidney antigens", and the use of such kidney antigens for detecting disorders of the kidney, particularly the presence of kidney cancer and kidney cancer metastases. More specifically, isolated kidney associated nucleic acid molecules are provided encoding novel kidney associated polypeptides. Novel kidney polypeptides and antibodies that bind to these polypeptides are provided. Also provided are vectors, host cells, and recombinant and synthetic methods for producing human kidney associated polynucleotides and/or polypeptides. The invention further relates to diagnostic and therapeutic methods useful for diagnosing, treating, preventing and/or prognosing disorders related to the kidney, including kidney cancer, and therapeutic methods for treating such disorders. The invention further relates to screening methods for identifying agonists and antagonists of polynucleotides and polypeptides of the invention. The present invention further relates to methods and/or compositions for inhibiting the production and function of the polypeptides of the present invention.



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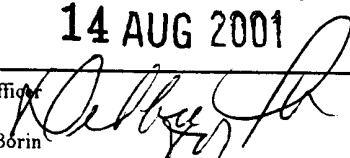
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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US01/01343

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC(7) : C07H21/02; C07K14/00 US CL : 530/350, 536/23 According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) U.S. : 530/350, 536/23 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) Genenseq, GenEmbl, EST		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	Database GenEmbl, Accession number AL117209, 11 January 2001	1-4
<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:	"I"	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
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier document published on or after the international filing date	"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
"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)	"&"	document member of the same patent family
"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		
Date of the actual completion of the international search 18 MAY 2001	Date of mailing of the international search report <b>14 AUG 2001</b>	
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  Michael Borin Telephone No. (703) 308-0196	

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US01/01343**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.  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 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 Extra 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.:  
SEQ ID Nos 11 and 286, claims 1-10,11,13,14-16
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.:

**Remark on Protest**

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

No protest accompanied the payment of additional search fees.

## BOX II. OBSERVATIONS WHERE UNITY OF INVENTION WAS LACKING

This ISA found multiple inventions as follows:

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 searched, the appropriate additional examination fees must be paid.

Group I, claims 1-10,11,12 14-16 to nucleic acids, vectors, host cells, method of making recombinant cell using said nucleic acids, method of use of polynucleotides and cells to make a polypeptide and polypeptides encoded by said nucleic acids.

Group II, claim 13, drawn to antibody.

Group III, claim 17, drawn to method for polynucleotide-based method of treatment.

Group IV, claim 18, drawn to polynucleotide-based method of diagnosing a pathological condition.

Group V, claim 19, drawn to polypeptide-based method of diagnosing a pathological condition.

Group VI, claim 20, drawn to polypeptide-based method of identifying a binding partner to the polypeptide and to a product determined by this method.

Group VII, claim 21, drawn to a gene.

Group VIII, claims 22,23 drawn to polynucleotide-based method of identifying activity and product obtained thereby.

Group IX, claim 17, drawn to method for polypeptide-based method of treatment.

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 inventions listed as Groups I-II are drawn to different products which lack the same or corresponding special technical features. Groups V, IX are different methods of use of nucleic acids of Group I. Groups IV,VI, VII are different methods of use of polypeptides of Group I.

*Sequence Election Requirement Applicable to All Groups*

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 lack of unity is partially waived and 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 four additional sequences.