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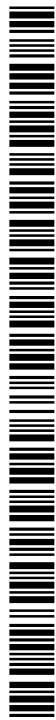
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(54) Title: NOVEL ADVANCED GLYCOSYLATION END PRODUCT-SPECIFIC RECEPTOR-LIKE PROTEIN AND NUCLEIC ACIDS ENCODING SAME

(57) Abstract: The present invention relates generally to nucleic acids, proteins, and antibodies. The invention relates more particularly to nucleic acid molecules, proteins, and antibodies of a novel isoform of the Advanced Glycosylation End product-specific Receptor (RAGE), and its fragments, derivatives, variants, homologs, analogs, or a combination thereof.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US2004/038870

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C07K14/705 C12N15/12 G01N33/566

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)
IPC 7 C07K G01N

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 practical, search terms used)

EPO-Internal, BIOSIS, EMBASE, Sequence Search

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 01/92892 A (TRANS TECH PHARMA; SHAHBAZ, MANOUCHEHR; TRANSTECH PHARMA, INC) 6 December 2001 (2001-12-06) * 95,91% identity in 416 aa overlap (total 417 aa) of SEQ ID NO: 1 with SEQ ID NO: 2 *	1-27
Y	WO 02/059260 A (HYSEQ, INC; TANG, Y., TOM; GOODRICH, RYLE, W; LIU, CHENGHUA; ZHOU, PIN) 1 August 2002 (2002-08-01) * 92,38% identity in 433 aa overlap (total 417 aa) of SEQ ID NO: 672 with SEQ ID NO: 2; 99,81% identity in 1034 nt overlap (total 1429 nt) of SEQ ID NO: 330 with SEQ ID NO: 1 * ----- -/--	1-27

Further documents are listed in the continuation of box C.

Patent family members are listed in 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 document but 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

24 June 2005

Date of mailing of the international search report

01/07/2005

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/US2004/038870

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>WO 02/30889 A (THE TRUSTEES OF COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK; THE TRUST) 18 April 2002 (2002-04-18) * 95,67% identity in 416 aa overlap (total 417 aa) of SEQ ID NO:3 with SEQ ID NO: 2; 99,81% identity in 1034 nt overlap (total 1429 nt) of SEQ ID NO: 4 with SEQ ID NO: 1 *</p>	1-27
Y	<p>WO 97/39121 A (SCHERING AKTIENGESELLSCHAFT) 23 October 1997 (1997-10-23) the whole document</p>	1-27
Y	<p>WO 00/20458 A (THE TRUSTEES OF COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK) 13 April 2000 (2000-04-13) the whole document</p>	1-27
Y	<p>KISLINGER T ET AL: "N-epsilon-(carboxymethyl)lysine adducts of proteins are ligands for receptor for advanced glycation end products that activate cell signaling pathways and modulate gene expression" JOURNAL OF BIOLOGICAL CHEMISTRY, AMERICAN SOCIETY OF BIOLOGICAL CHEMISTS, BALTIMORE, MD, US, vol. 274, no. 44, 29 October 1999 (1999-10-29), pages 31740-31749, XP002217809 ISSN: 0021-9258 the whole document</p>	1-27
A	<p>SCHMIDT A M ET AL: "ACTIVATION OF RECEPTOR FOR ADVANCED GLYCATION END PRODUCTS A MECHANISM FOR CHRONIC VASCULAR DYSFUNCTION IN DIABETIC VASCULOPATHY AND ATHEROSCLEROSIS" CIRCULATION RESEARCH, GRUNE AND STRATTON, BALTIMORE, US, vol. 84, 19 March 1999 (1999-03-19), pages 489-497, XP002909514 ISSN: 0009-7330</p>	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2004/038870

Box 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:

Although claims 19-23 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
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 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:

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.:

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

Information on patent family members

International Application No

PCT/US2004/038870

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0192892	A	06-12-2001	US 6908741 B1	21-06-2005
			AU 7502901 A	11-12-2001
			CA 2379521 A1	06-12-2001
			EP 1305635 A2	02-05-2003
			JP 2003535339 T	25-11-2003
			MX PA02001103 A	21-07-2003
			WO 0192892 A2	06-12-2001

WO 02059260	A	01-08-2002	AU 5362001 A	30-10-2001
			CA 2406039 A1	25-10-2001
			CA 2429343 A1	01-08-2002
			EP 1276754 A2	22-01-2003
			EP 1341804 A2	10-09-2003
			WO 0179446 A2	25-10-2001
			WO 02059260 A2	01-08-2002
			US 2004137434 A1	15-07-2004
			US 2002142953 A1	03-10-2002

WO 0230889	A	18-04-2002	AU 1319202 A	22-04-2002
			WO 0230889 A2	18-04-2002

WO 9739121	A	23-10-1997	AU 2696097 A	07-11-1997
			WO 9739121 A1	23-10-1997
			ZA 9703242 A	05-08-1998

WO 0020458	A	13-04-2000	US 2003087302 A1	08-05-2003
			AU 766690 B2	23-10-2003
			AU 1102900 A	26-04-2000
			AU 2004200276 A1	19-02-2004
			CA 2346339 A1	13-04-2000
			EP 1127074 A1	29-08-2001
			JP 2002526758 T	20-08-2002
			WO 0020458 A1	13-04-2000
			US 2004142391 A1	22-07-2004
