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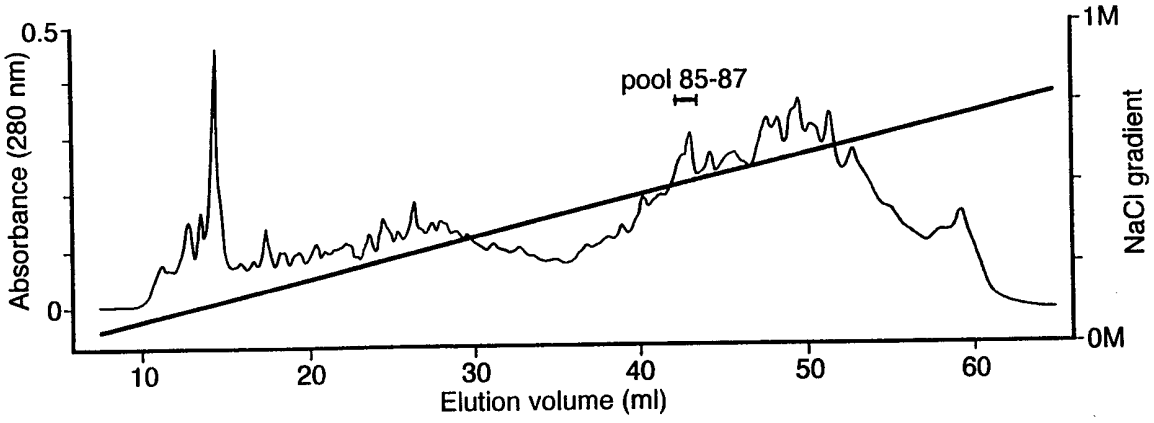
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5 August 1999 (05.08.99)

(54) Title: NUCLEAR TARGETING BY MEANS OF STREPTOCOCCAL PROTEIN H



(57) Abstract

A nuclear delivery construct comprises: (i) protein H or a fragment or derivative thereof that is capable of being targeted to the nucleus of a eukaryotic cell; and associated therewith (ii) one or more other components whose targeting to the nucleus of the eukaryotic cell is desired.

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INTERNATIONAL SEARCH REPORT

Inter nal Application No
PCT/GB 98/03385

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A61K47/48

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 6 A61K

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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	PEREZ-CASAL J ET AL: "Role of the conserved C-repeat region of the M protein of Streptococcus pyogenes." MOL MICROBIOL, MAR 1995, 15 (5) P907-16, XP002099685 ENGLAND see abstract	1-23
Y	see page 913, column 2, paragraph 3-4 --- -/--	1-23

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

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"E" earlier document but published on or after the international filing date

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"P" document published prior to the international filing date but later than the priority date claimed

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"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
28 April 1999	21/05/1999

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Gonzalez Ramon, N

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INTERNATIONAL SEARCH REPORT

Inter nal Application No
PCT/GB 98/03385

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
A	AXCRONA K. ET AL: "Multiple ligand interactions for bacterial immunoglobulin-binding proteins on human and murine cells of the hematopoietic lineage" SCAND. J. IMMUNOL., vol. 42, 3 September 1995, pages 359-367, XP002099687 cited in the application see abstract	1-23
Y	see page 366, column 1, paragraph 2	1-23
Y	PACK T D ET AL: "Identification of an amino acid signature sequence predictive of protein G-inhibitable IgG3-binding activity in group-A streptococcal IgG-binding proteins" GENE, vol. 171, no. 1, 24 May 1996, page 65-70 XP004042768 see abstract; figures 1,3	1-23
Y	FRICK I. M. ET AL: "Protein H a bacterial surface protein with affinity for both immunoglobulin and fibronectin type III domains" EMBO JOURNAL, vol. 14, no. 8, 1995, pages 1674-1679, XP002099688 cited in the application see abstract see page 1678, column 1, paragraph 1	1-23
X,P	CUE D. ET AL: "Streptococcus pyogenes serotype M1 encodes multiple pathways for entry into human epithelial cells" INFECTION AND IMMUNITY, vol. 66, no. 10, October 1998, pages 4593-4601, XP002099689 see page 4599, column 2, paragraph 2 see abstract	1-23
Y	BESSEN D. E.: "Two domain motif for IgG binding activity by group A streptococcal emm gene products" GENE,1997, pages 75-82, XP002099690 region G1234 fig 1 see abstract see discussion	1-23

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INTERNATIONAL SEARCH REPORT

Inter nal Application No
PCT/GB 98/03385

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
Y	WERIERSKA-GADEK J. ET AL: "Nucleolar proteins B23 and C23 as target antigens in chronic graft-versus-host disease" BLOOD, vol. 79, no. 4, 15 February 1992, pages 1081-1086, XP002101490 see abstract	1-23
Y	TALAY S R ET AL: "STRUCTURE OF A GROUP STREPTOCOCCAL PROTEIN THAT BINDS TO FIBRINOGENALBUMIN AND IMMUNOGLOBULIN G VIA OVERLAPPING MODULES" BIOCHEMICAL JOURNAL, vol. 315, no. 2, 15 April 1996, pages 577-582, XP002040105 see page 577, column 1; figure 1	1-23
A	EP 0 371 199 A (SUMITOMO CHEMICAL CO ;HIGHTECH RECEPTOR AB (SE)) 6 June 1990 see abstract; claims 4,5	1-23
A	WO 91 19740 A (HIGHTECH RECEPTOR AB) 26 December 1991 see abstract; claim 2; figures 7,9	1-23

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB 98/03385

Box I Observations where certain claims were found unsearchable (Continuation of item 1 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. [X] Claims Nos.: 22, 23
because they relate to subject matter not required to be searched by this Authority, namely:

Remark: Although claims 22, 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 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:

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

Inter nal Application No
PCT/GB 98/03385

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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		JP 2871709 B	17-03-1999
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