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(54) Title: SYSTEM FOR PRODUCTION AND SCREENING OF MONOCLONAL ANTIBODIES

(57) Abstract: The invention provides methods for producing a monoclonal antibody in a host cell. The methods involve introducing linear expression cassettes containing coding sequences for immunoglobulin heavy and light chains into a host cell and expressing a monoclonal antibody. In most embodiments, the immunoglobulin heavy and light chains are both derived from a single antibody-producing cell. The invention further provides methods for producing a plurality of monoclonal antibodies, and methods of screening a plurality of monoclonal antibodies to identify a monoclonal antibody of interest and its encoding nucleic acid. Also provided by the invention are host cells containing monoclonal antibody-encoding sequences, and libraries of monoclonal antibodies for use in screening methods. The invention further provides kits for carrying out the subject methods. The subjects systems, methods and kits find use in a variety of different industrial, medical and research applications.

WO 2004/032841 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/31446

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C07K 16/00; A61K 39/395
 US CL : 530/387.1, 388.1; 424/141.1

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. : 530/387.1, 388.1; 424/141.1

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)
 EAST, Foreign Patents, Medline

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,610,034 A (NYSSONEN et al.) 11 March 1997 (11.03.1997), columns 5-6, column 15 line 57 to column 16 line 4, columns 22-23, and claims 1-36.	1-3
X	US 2001/0036647 A1 (CHOUDARY et al.) 01 November 2001 (01.11.2001), see entire document.	1-3
X	US 6,372,214 B1 (PRUSINER et al.) 16 April 2002 (16.04.2002) columns 21-28.	1-3
X	BABCOOK, J.S. et al. A novel strategy for generating monoclonal antibodies from single, isolated lymphocytes producing antibodies of defined specificities. PNAS USA. July 1996, Vol. 93, pages 7843-7848, see entire document.	1-3

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

23 January 2004 (23.01.2004)

Date of mailing of the international search report

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/31446

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.: 4-10
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.