

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
7 October 2004 (07.10.2004)

PCT

(10) International Publication Number
WO 2004/085474 A3

(51) International Patent Classification⁷: **C07K 16/28**,
C12N 5/00

(21) International Application Number:
PCT/US2004/008802

(22) International Filing Date: 22 March 2004 (22.03.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/456,324 20 March 2003 (20.03.2003) US
60/523,836 19 November 2003 (19.11.2003) US

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
23 December 2004

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.

(54) Title: METHOD OF PRODUCING AN ANTIBODY TO EPIDERMAL GROWTH FACTOR RECEPTOR

(57) Abstract: The present invention is directed to a method of producing an antibody to Epidermal Growth Factor Receptor (EGFR). The method includes producing transformed cells that express EGFR antibodies, culturing the transformed cells, harvesting the transformed cells to collect the EGFR antibodies, and purifying the EGFR antibodies.



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INTERNATIONAL SEARCH REPORT

International Application No
PCT/US2004/008802

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C07K16/28 C12N5/00

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 C12N

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, WPI Data, PAJ, EMBL

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 02/100348 A (GENMAB AS ; VAN DE WINKEL JAN (NL); VAN DIJK MARCUS A (NL); GERRITSEN) 19 December 2002 (2002-12-19) abstract	1,2
A	page 27, line 25 -page 28, line 77 ---	1-12
X	CHANDLER L P ET AL: "A monoclonal antibody which inhibits epidermal growth factor binding has opposite effects on the biological action of epidermal growth factor in different cells." THE JOURNAL OF BIOLOGICAL CHEMISTRY. 25 MAR 1985, vol. 260, no. 6, 25 March 1985 (1985-03-25), pages 3360-3367, XP002298388 ISSN: 0021-9258 the whole document --- -/--	1,2

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

29 September 2004

Date of mailing of the international search report

11/11/2004

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/US2004/008802

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	ZHOU WEICHANG ET AL: "Fed-batch culture of recombinant NS0 myeloma cells with high monoclonal antibody production" BIOTECHNOLOGY AND BIOENGINEERING, vol. 55, no. 5, 1997, pages 783-792, XP002298389 ISSN: 0006-3592 page 784, right-hand column, last paragraph abstract ----	1-12
A	ATCC: "Hybri-Care Medium" INTERNET ARTICLE, 'Online! 6 January 2003 (2003-01-06), XP002298392 Retrieved from the Internet: <URL:atcc.org/SearchCatalogs/directdetail.cfm?collection=misc&atccnum=46-x> 'retrieved on 2004-09-28! abstract ----	1-12
A	HEIDEMANN-R ET AL.: "The use of peptones as medium additives for the production of a recombinant therapeutic protein in high density perfusion cultures of mammalian cells" CYTOTECHNOLOGY, vol. 32, no. 2, February 2000 (2000-02), pages 157-167, XP002298390 ISSN: 0920-9069 abstract ----	1-12
A	DEZENGOTITA V M ET AL: "Phosphate feeding improves high-cell-concentration NS0 myeloma culture performance for monoclonal antibody production." BIOTECHNOLOGY AND BIOENGINEERING. 5 SEP 2000, vol. 69, no. 5, 5 September 2000 (2000-09-05), pages 566-576, XP002298391 ISSN: 0006-3592 abstract page 568, right-hand column, paragraph 1 ----	1-12
A	MORRISON S L ET AL: "GENETICALLY ENGINEERED ANTIBODY MOLECULES AND THEIR APPLICATION" ANNALS OF THE NEW YORK ACADEMY OF SCIENCES, NEW YORK ACADEMY OF SCIENCES, NEW YORK, NY, US, vol. 507, 1987, pages 187-198, XP009022405 ISSN: 0077-8923 abstract -----	1-12

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US2004/008802

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 02100348 A	19-12-2002	CA 2450285 A1	19-12-2002
		CZ 20040038 A3	16-06-2004
		EP 1417232 A2	12-05-2004
		WO 02100348 A2	19-12-2002
		US 2003091561 A1	15-05-2003
		US 2003194403 A1	16-10-2003