(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
15 May 2003 (15.05.2003)

PCT

(10) International Publication Number
WO 03/040170 A3

(51) International Patent Classification[7]: A61K 39/395, C07K 16/28, C12N 5/10, 15/00, 15/11, 15/12, 15/63

(21) International Application Number: PCT/US02/36107

(22) International Filing Date:
8 November 2002 (08.11.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/348,980 9 November 2001 (09.11.2001) US

(71) Applicants *(for all designated States except US)*: **PFIZER PRODUCTS INC.** [US/US]; Eastern Point Road, Groton, CT 06340 (US). **ABGENIX, INC.** [US/US]; 7601 Dumbarton Circle, Fremont, CA 94555 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **BEDIAN, Vahe** [US/US]; 3 Frog Hollow Road, East Lyme, CT 06333 (US). **GLADUE, Ronald, P.** [US/US]; 83 Rowley Drive, Stonington, CT 06378 (US). **CORVALAN, Jose** [US/US]; 125 Williams lane, Foster City, CA 94404 (US). **JIA, Xiao-Chi** [US/US]; 22 Murray Court, San Mateo, CA 94403 (US). **FENG, Xiao** [US/US]; 135 Red Cedar Lane, Union City, CA 94587 (US).

(74) Agents: **HALEY, James, F., Jr.** et al.; Fish & Neave, 1251 Avenue of the Americas, New York, NY 10020 (US).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, 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, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

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

Published:
— *with international search report*

(88) Date of publication of the international search report:
9 October 2003

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.

WO 03/040170 A3

(54) Title: ANTIBODIES TO CD40

(57) Abstract: The present invention relates to antibodies and antigen-binding portions thereof that specifically bind to CD40, preferably human CD40, and that function as CD40 agonists. The invention also relates to human anti-CD40 antibodies and antigen-binding portions thereof. The invention also relates to antibodies that are chimeric, bispecific, derivatized, single chain antibodies or portions of fusion proteins. The invention also relates to isolated heavy and light chain immunoglobulins derived from human anti-CD40 antibodies and nucleic acid molecules encoding such immunoglobulins. The present invention also relates to methods of making human anti-CD40 antibodies, compositions comprising these antibodies and methods of using the antibodies and compositions for diagnosis and treatment. The invention also provides gene therapy methods using nucleic acid molecules encoding the heavy and/or light immunoglobulin molecules that comprise the human anti-CD40 antibodies. The invention also relates to transgenic animals comprising nucleic acid molecules of the present invention.