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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
27 March 2014 (27.03.2014)

WIPO | PCT

(10) International Publication Number
WO 2014/047231 A1

(51) International Patent Classification:
C07K 16/28 (2006.01) *A61P 35/00* (2006.01)
A61K 39/395 (2006.01)

(21) International Application Number:
PCT/US2013/060511

(22) International Filing Date:
19 September 2013 (19.09.2013)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

61/704,029	21 September 2012 (21.09.2012)	US
61/753,461	17 January 2013 (17.01.2013)	US
61/763,110	11 February 2013 (11.02.2013)	US
61/827,098	24 May 2013 (24.05.2013)	US

(71) Applicant: **REGENERON PHARMACEUTICALS, INC.** [US/US]; 777 Old Saw Mill River Road, Tarrytown, NY 10591 (US).

(72) Inventors: **SMITH, Eric**; 310 Lexington Avenue, Apt. 4E, New York, NY 10016 (US). **PAPADOPOULOS, Nicholas, J.**; 59 Heritage Lane, Lagrangeville, NY 12540 (US).

(74) Agent: **TERMES, Lance A.**; Alston & Bird LLP, Bank of America Plaza, Suite 4000, 101 South Tryon Street, Charlotte, NC 28280-4000 (US).

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

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report (Art. 21(3))*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

— *with sequence listing part of description (Rule 5.2(a))*

(54) Title: ANTI-CD3 ANTIBODIES, BISPECIFIC ANTIGEN-BINDING MOLECULES THAT BIND CD3 AND CD20, AND USES THEREOF

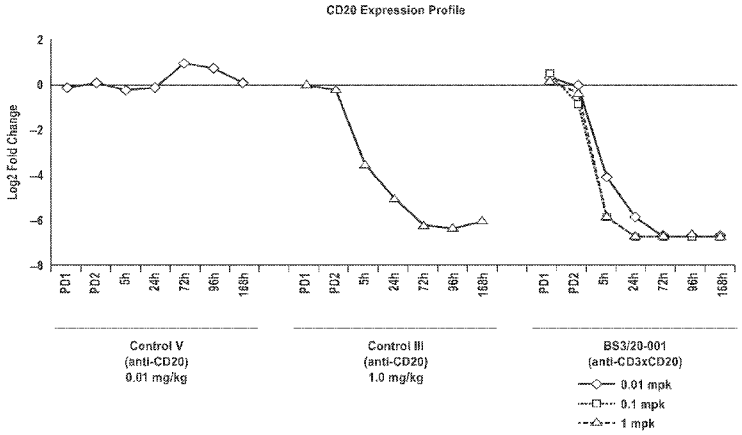


FIG. 6

(57) Abstract: The present invention provides antibodies that bind to CD3 and methods of using the same. According to certain embodiments, the antibodies of the invention bind human CD3 with high affinity and induce human T cell proliferation. The invention includes antibodies that bind CD3 and induce T cell-mediated killing of tumor cells. According to certain embodiments, the present invention provides bispecific antigen-binding molecules comprising a first antigen-binding domain that specifically binds human CD3, and a second antigen-binding molecule that specifically binds human CD20. In certain embodiments, the bispecific antigen-binding molecules of the present invention are capable of inhibiting the growth of B-cell tumors expressing CD20. The antibodies and bispecific antigen-binding molecules of the invention are useful for the treatment of diseases and disorders in which an up-regulated or induced targeted immune response is desired and/or therapeutically beneficial. For example, the antibodies of the invention are useful for the treatment of various cancers as well as other CD20-related diseases and disorders.

WO 2014/047231 A1