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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
4 October 2012 (04.10.2012)

WIPO | PCT

(10) International Publication Number
WO 2012/135740 A3

(51) International Patent Classification:
A61K 39/395 (2006.01) *A61K 39/00* (2006.01)

(21) International Application Number:
PCT/US2012/031648

(22) International Filing Date:
30 March 2012 (30.03.2012)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/470,863 1 April 2011 (01.04.2011) US

(71) Applicant *(for all designated States except US)*: **IMMUNOGEN, INC.** [US/US]; 830 Winter Street, Waltham, MA 02451 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **DECKERT, Jutta** [US/US]; 16 Eaton Road, Lexington, MA 02420 (US). **SETIADY, Julianto** [ID/US]; 132 Clocktower Drive, Unit 4110, Waltham, MA 02452 (US). **PARK, Peter U.** [US/US]; 25 Webster Avenue, #301, Somerville, MA 02143 (US).

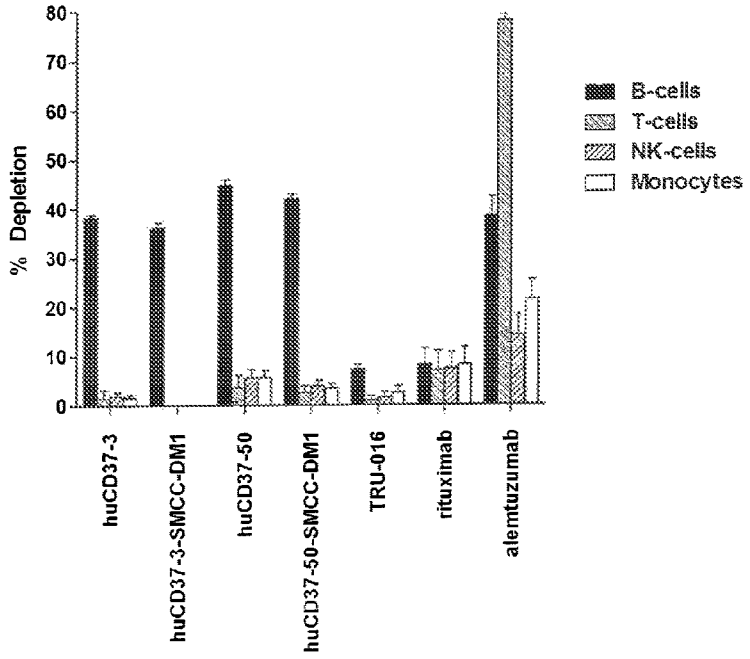
(74) Agents: **STEFFE, Eric K.** et al.; Sterne Kessler Goldstein Fox P.L.L.C., 1100 New York Avenue N.W., Washington, DC 20005 (US).

(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, 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, KM, 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, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, 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.

[Continued on next page]

(54) Title: CD37-BINDING MOLECULES AND IMMUNOCONJUGATES THEREOF

Figure 4



(57) Abstract: Disclosed are methods of using CD37 agents, including but not limited to antibodies and immunoconjugates, that bind to CD37 to deplete B-cells (e.g., non-cancerous B-cells), for treating autoimmune and inflammatory diseases. Further disclosed are sequences of variable regions of light chains and heavy chains of the antibodies that specifically bind to CD37.

WO 2012/135740 A3

(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, MD, 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, 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 (an) indication(s) in relation to deposited biological material furnished under Rule 13bis separately from the description (Rules 13bis.4(d)(i) and 48.2(a)(viii))*

(88) Date of publication of the international search report:
7 November 2013