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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
23 May 2013 (23.05.2013)

WIPO | PCT

(10) International Publication Number
WO 2013/072415 A1

(51) International Patent Classification:
C07K 16/28 (2006.01) *A61P 35/02* (2006.01)
A61K 39/395 (2006.01) *A61P 37/00* (2006.01)

(21) International Application Number:
PCT/EP2012/072730

(22) International Filing Date:
15 November 2012 (15.11.2012)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

61/560,144	15 November 2011 (15.11.2011)	US
61/560,149	15 November 2011 (15.11.2011)	US
61/560,162	15 November 2011 (15.11.2011)	US
61/560,178	15 November 2011 (15.11.2011)	US
61/560,183	15 November 2011 (15.11.2011)	US
61/651,474	24 May 2012 (24.05.2012)	US
61/651,486	24 May 2012 (24.05.2012)	US

(71) Applicants: **AMGEN RESEARCH (MUNICH) GMBH** [DE/DE]; Staffelseestr. 2, 81477 Munich (DE). **BOEHRINGER INGELHEIM INTERNATIONAL GMBH** [DE/DE]; Binger Strasse 173, 55216 Ingelheim am Rhein (DE).

(72) Inventors: **KUFER, Peter**; c/o Amgen Research (Munich) GmbH, Staffelseestr. 2, 81477 Munich (DE). **RAUM, Tobias**; c/o Amgen Research (Munich) GmbH, Staffelseestrasse 2, 81477 Munich (DE). **HOFFMANN, Patrick**; c/o Amgen Research (Munich) GmbH, Staffelseestr. 2, 81477 Munich (DE). **KISCHEL, Roman**; c/o Amgen Research (Munich) GmbH, Staffelseestr. 2, 81477 Munich (DE). **LUTTERBUESE, Ralf**; c/o Amgen Research (Munich) GmbH, Staffelseestr. 2, 81477 Munich (DE). **RAU, Doris**; c/o Amgen Research (Munich) GmbH, Staffelseestr. 2, 81477 Munich (DE). **ADAM, Paul**; c/o Boehringer Ingelheim GmbH, Corporate Patents, Binger Strasse 173, 55216 Ingelheim am Rhein (DE). **BORGES, Eric**; c/o Boehringer Ingelheim GmbH, Corporate Patents, Binger Strasse 173, 55216 Ingelheim am Rhein (DE). **HEBEIS, Barbara**; c/o Boehringer Ingelheim GmbH, Corporate Patents, Binger Strasse 173, 55216 Ingelheim am Rhein (DE). **HIPP, Susanne**; c/o Boehringer Ingelheim GmbH, Corporate Patents, Binger Strasse 173, 55216 Ingelheim am Rhein (DE).

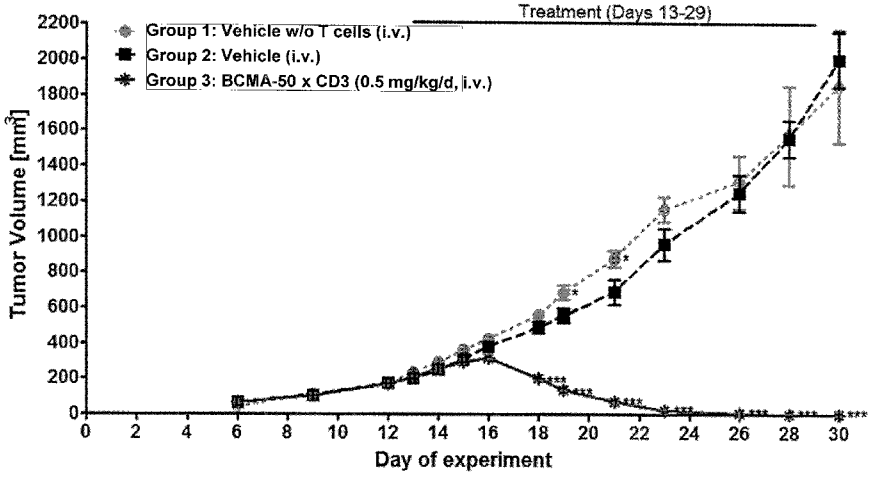
(74) Agents: **WEINZIERL, Gerhard** et al.; Schiweck Weinzierl Koch, European Patent Attorneys, Landsberger Str. 98, 80339 Munich (DE).

(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, 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, PA, 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: BINDING MOLECULES FOR BCMA AND CD3

Figure A16



(57) Abstract: The present invention relates to a binding molecule comprising a first and a second binding domain, wherein the first binding domain is capable of binding to epitope clusters of BCMA, and the second binding domain is capable of binding to the T cell CD3 receptor complex. Moreover, the invention provides a nucleic acid sequence encoding the binding molecule, a vector comprising said nucleic acid sequence and a host cell transformed or transfected with said vector. Furthermore, the invention provides a process for the production of the binding molecule of the invention, a medical use of said binding molecule and a kit comprising said binding molecule.

WO 2013/072415 A1

(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, 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))*