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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
3 October 2013 (03.10.2013)

WIPO | PCT

(10) International Publication Number
WO 2013/147899 A1

(51) International Patent Classification:
A61K 38/17 (2006.01) *C07K 16/46* (2006.01)
A61K 39/395 (2006.01) *C12N 15/85* (2006.01)
A61K 31/7088 (2006.01) *A61P 19/00* (2006.01)

(21) International Application Number:
PCT/US2012/031737

(22) International Filing Date:
31 March 2012 (31.03.2012)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant *(for all designated States except US)*: **R-PHARM, CJSC (Closed Joint Stock Company)** [RU/RU]; 12 bld. 1 Nagorny Proezd, 117105 Moscow (RU).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **LAVROVSKY, Yan** [US/US]; 10158 Waterridge Circle, #136, San Diego, CA 92121 (US). **XU, Ting** [CN/US]; 11 Dawson Drive, Sudbury, MA 01776 (US). **REPIK, Alexey** [RU/RU]; 3 Osenniy Boulevard, Apt. 106, Moscow, 121609 (RU). **GUO, Kangping** [CN/CN]; Suit 1002, Bld. 41, Zhonghuichenxixinyuan, Xiangcheng District, Suzhou, Jiangsu Province, 215000 (CN). **SAMSONOV, Mikhail** [RU/RU]; 74-6-77 Leningradsky Prospect, Moscow, 125313 (RU). **IGNATIEV, Vasily** [RU/RU]; 13 Skolkovskoye Shosse, Apt. 212, Moscow, 121353 (RU).

(74) Agent: **KORKHIN, Yakov, M.**; SciTech Legal PC, PO Box 15696, Boston, MA 02215 (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.

(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))*

(54) **Title**: OSTEOPROTEGERIN DERIVED COMPOSITION AND USE THEREOF

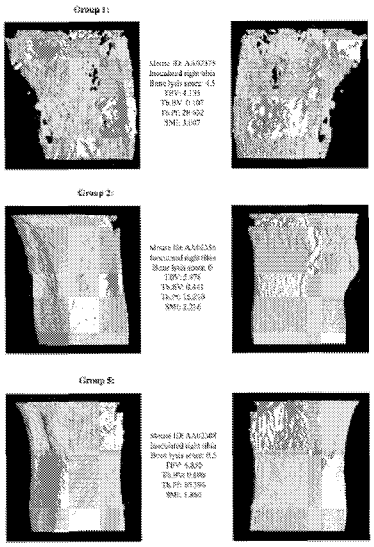


FIGURE 11

(57) **Abstract**: A therapeutic composition is described that can be used for treating or prevention of diseases association with bone resorption, particularly of a metastatic carcinoma. In certain aspects, the composition is based on a polypeptide which includes the leading 215 amino acids of the human osteoprotegerin followed by the Fc portion of the human IgGl protein. DNA expression vectors and expression systems for overproducing the polypeptide in mammalian cells are also provided for.

WO 2013/147899 A1