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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
14 March 2002 (14.03.2002)

PCT

(10) International Publication Number
WO 02/20718 A2

(51) International Patent Classification[7]: C12N

(21) International Application Number: PCT/US01/27502

(22) International Filing Date:
4 September 2001 (04.09.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/230,152 5 September 2000 (05.09.2000) US
60/307,557 24 July 2001 (24.07.2001) US

(71) Applicants *(for all designated States except US)*: **THE ROCKEFELLER UNIVERSITY** [US/US]; 1230 York Avenue, New York, NY 10021-6399 (US). **THE TRUSTEES OF THE UNIVERSITY OF PENNSYLVANIA** [US/US]; 3700 Market Street, Suite 300, Philadelphia, PA 19104 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **CHOI, Yongwon** [US/US]; 751 Bryn Mawr Avenue, Bryn Mawr, PA 19010 (US). **KIM, Nacksung** [KR/US]; 333 North Avenue, Apt. 47A, Secane, PA 19018 (US).

(74) Agents: **WOODLEY, Samuel, S.** et al.; Darby & Darby P.C., 805 Third Avenue, New York, NY 10022-7513 (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, EC, EE, ES, FI, GB, GD, GE, 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, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

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

Published:
— *without international search report and to be republished upon receipt of that report*

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 02/20718 A2

(54) Title: OSTEOCLAST-ASSOCIATED RECEPTOR

(57) Abstract: This invention relates to methods and compositions that modulate the activity of cells, such as osteoclast cells, involved in the growth, development, repair, degradation and homeostasis of bone tissue. The compositions may therefore by used to modulate such processes and to treat bone growth related disorders (for example, osteoporosis and osteopetrosis). In particular, the invention provides a novel polypeptide, referred to as the Osteoclast Associated Receptor or OSCAR, that is specifically expressed by oteoclast cells and modulates osteoclast cell activity. OSCAR nucleic acids (including vectors), fusion polypeptides and OSCAR specific antibodies are also provided, as well as diagnostic and screening assays using such nucleic acids, polypeptide and antibodies.