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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
18 December 2008 (18.12.2008)

PCT

(10) International Publication Number
WO 2008/153237 A1

(51) International Patent Classification:
C07K 16/00 (2006.01)

(21) International Application Number:
PCT/KR2007/003077

(22) International Filing Date: 26 June 2007 (26.06.2007)

(25) Filing Language: Korean

(26) Publication Language: English

(30) Priority Data:
10-2007-0057719 13 June 2007 (13.06.2007) KR

(71) Applicant *(for all designated States except US)*: **KOREA RESEARCH INSTITUTE OF BIOSCIENCE AND BIOTECHNOLOGY** [KR/KR]; 52 Oun-dong, Yuseong-gu, Daejeon 305-333 (KR).

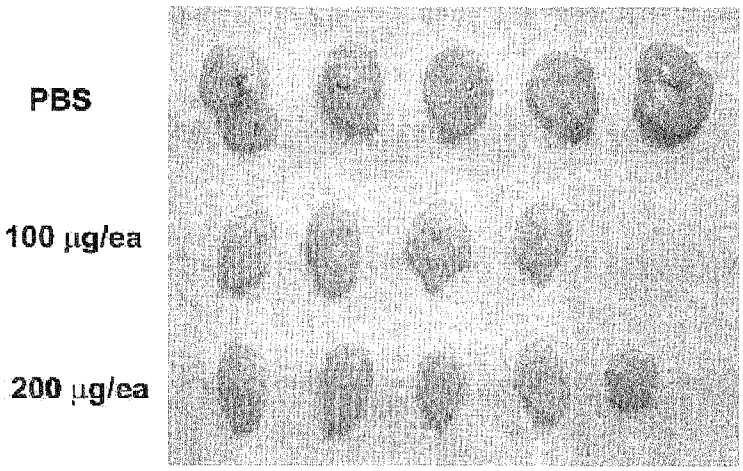
(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **YOO, Jin San** [KR/KR]; 510-501, Expo Apt., Jeonmin-dong, Yuseong-gu, Daejeon 305-762 (KR). **LEE, Weon Sup** [KR/KR]; 108-905, Hana Apt., Sinseong-dong, Yuseong-gu, Daejeon 305-721 (KR). **SHIM, Sang Ryeol** [KR/KR]; 2303, Korea Advanced Institute of, Science and Technology Doksin Dormitory, Guseong-dong, Yuseong-gu, Daejeon 305-701 (KR). **PARK, Mi Hee** [KR/KR]; 402, Korea Research Institute of, Bioscience and Biotechnology Nanumgwan Dormitory, 52 Oun-dong, Yuseong-gu, Daejeon 305-333 (KR). **KANG, Jeong Eun** [KR/KR]; 201-506, Samik Mokhwa Apt., Boksu-dong, Seo-gu, Daejeon 302-742 (KR). **KIM, Do Yun** [KR/KR]; 25/6, 277-2, Godeok-dong, Gangdong-gu, Seoul 134-080 (KR). **LEE, Joon Chul** [KR/KR]; 206-305, Dongchun Maeul Apt., Yeonsu-gu, Incheon 406-110 (KR). **LEE, Dong Heon** [KR/KR]; 613, Sanglelilaplusvill, Bongmyeong-dong, Yuseong-gu, Daejeon 305-301 (KR). **CHO, Too Hyon** [KR/KR]; 417, Patima Officetel, 593-9, Yeonsu-dong, Yeonsu-gu, Incheon 406-110 (KR). **SUL, Sam Sook** [KR/KR]; 108-1506, Yeonsu Siyeong 1-cha Apt., Yeonsu 2-dong, Yeonsu-gu, Incheon 406-761 (KR). **KWON, Young Guen** [KR/KR]; 101-102, rexle Apt., Dogok-dong, Gangnam-gu, Seoul 135-270 (KR). **PYUN, Bo Jeong** [KR/KR]; 102, 309-8, Yeonhui 3-dong, Seodaemun-gu, Seoul 120-830 (KR). **KIM, Kwi Hwa** [KR/KR]; 406-1303, Expo Apt., Jeonmin-dong, Yuseong-gu, Daejeon 305-762 (KR). **YUN, Chae Ok** [KR/KR]; 301, Bienetre, Banpo 4-dong, Seocho-gu, Seoul 137-044 (KR). **KIM, Nahm Ju** [KR/KR]; 602-401, Unam Neomia, Gwanpyeong-dong, Yuseong-gu, Daejeon 305-746 (KR). **JEON, Jae Won** [KR/KR]; 401-301, Ssangyong Sweet Dot Home, Gwanpyeong-dong, Yuseong-gu,

[Continued on next page]

(54) **Title:** HUMAN MONOCLONAL ANTIBODY NEUTRALIZING VASCULAR ENDOTHELIAL GROWTH FACTOR RECEPTOR AND USE THEREOF

FIG. 28



(57) **Abstract:** The present invention relates to human monoclonal antibodies neutralizing vascular endothelial growth factor receptor and the use thereof. More specifically, relates to human ScFv molecules neutralizing vascular endothelial growth factor receptor, and a composition for inhibiting angiogenesis and a composition for treating cancer, which contain the human ScFv molecules. The disclosed monoclonal antibody neutralizing vascular endothelial growth factor receptor shows excellent neutralizing ability in living cells, compared to that of a commercially available antibody against vascular endothelial growth factor receptor, and shows the ability to neutralize vascular endothelial growth factor receptor not only in humans, but also in mice and rats. Thus, the monoclonal antibody will be useful in anticancer studies and will be highly effective in cancer treatment.

WO 2008/153237 A1

Daejeon 305-744 (KR). **LEE, Dong Sup** [KR/KR]; 205-302, Lotte Castle Apt., Jamwon-dong, Seocho-gu, Seoul 137-795 (KR). **PARK, Young Woo** [KR/KR]; 506-104, Expo Apt., Jeonmin-dong, Yuseong-gu, Daejeon 305-762 (KR). **RHA, Geun Bae** [KR/KR]; 1937, Bokdae 2-dong, Heungdeok-gu, Cheongju-si, Chungbuk 361-812 (KR). **JANG, Hyun Sook** [KR/KR]; 108-608, Chowon Apt., Mannyeon-dong, Seo-gu, Daejeon 302-740 (KR). **YOO, Hyeon Mi** [KR/KR]; 510-501, Expo Apt., Jeonmin-dong, Yuseong-gu, Daejeon 305-762 (KR). **KIM, Sung Woo** [KR/KR]; 106-503, Daelim Dure Apt., Sinseong-dong, Yuseong-gu, Daejeon 305-720 (KR). **KIM, Semi** [KR/KR]; 102-502, Chonggu Narae Apt., Jeonmin-dong, Yuseong-gu, Daejeon 305-729 (KR). **KOH, Sang Seok** [KR/KR]; 104-302, Dream world Apt., Jangdae-dong, Yuseong-gu, Daejeon 305-308 (KR).

(74) **Agent: LEE, Cheo Young**; 11th, Won Bldg., 648-26, Yeoksam-dong, Gangnam-gu, Seoul 135-080 (KR).

(81) **Designated States** *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, 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, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, 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, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report*

— *with sequence listing part of description published separately in electronic form and available upon request from the International Bureau*