



(43) International Publication Date
18 April 2013 (18.04.2013)

(10) International Publication Number
WO 2013/053751 A1

(51) International Patent Classification:

A61K 39/395 (2006.01) *A61K 31/519* (2006.01)
C07K 16/28 (2006.01) *A61K 31/655* (2006.01)
A61K 31/42 (2006.01) *A61K 45/06* (2006.01)

(21) International Application Number:

PCT/EP2012/070052

(22) International Filing Date:

10 October 2012 (10.10.2012)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/545,864 11 October 2011 (11.10.2011) US
12305889.3 20 July 2012 (20.07.2012) EP

(71) Applicants: **SANOFI** [FR/FR]; 54 rue La Boétie, F-75008 Paris (FR). **REGENERON PHARMACEUTICALS INC** [US/US]; 777 Old Saw Mill River Rd, Tarrytown, New York 10591-6707 (US).

(72) Inventors: **HUANG, Xiaohong**; c/o REGENERON PHARMACEUTICALS Inc., 777 Old Saw Mill River Road, Tarrytown, New York 10591-6707 (US). **JASSON, Martine**; c/o Sanofi, Patent Department, 54 rue La Boétie, F-75008 Paris (FR). **MARKS, Vanessa**; c/o Sanofi, Patent Department, 54 rue La Boétie, F-75008 Paris (FR). **RADIN, Allen**; c/o REGENERON PHARMACEUTICALS Inc., 777 Old Saw Mill River Road, Tarrytown, New York 10591-6707 (US).

(74) Agent: **TINEL, Marie-Line**; c/o Sanofi, Patent Department, 54 rue La Boétie, F-75008 Paris (FR).

(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.

(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).

Declarations under Rule 4.17:

— of inventorship (Rule 4.17(iv))

Published:

— with international search report (Art. 21(3))

— with sequence listing part of description (Rule 5.2(a))

(54) Title: COMPOSITIONS FOR THE TREATMENT OF RHEUMATOID ARTHRITIS AND METHODS OF USING SAME

(57) Abstract: The present invention provides compositions and methods of treating and improving the symptoms of rheumatoid arthritis using an antibody or antigen-binding fragment thereof that specifically binds human interleukin-6 receptor (hIL-6R) with a DMARD.



WO 2013/053751 A1