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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
10 October 2013 (10.10.2013)

WIPO | PCT

(10) International Publication Number
WO 2013/152001 A2

(51) International Patent Classification:
C07K 16/28 (2006.01)

(21) International Application Number:
PCT/US2013/034952

(22) International Filing Date:
2 April 2013 (02.04.2013)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/618,969 2 April 2012 (02.04.2012) US
61/778,703 13 March 2013 (13.03.2013) US

(71) Applicant: **REGENERON PHARMACEUTICALS, INC.** [US/SA]; 777 Old Saw Mill River Road, Tarrytown, NY 10591 (US).

(72) Inventors: **MURPHY, Andrew, J.**; 10 Newton Court, Croton-on-Hudson, NY 10520 (US). **KOSTIC, Ana**; 444 Manhattan Avenue, Apt. 6E, New York, NY 10026 (US).

(74) Agents: **TERMES, Lance** et al.; Alston & Bird LLP, Bank of America Plaza, 101 South Tryon Street, Suite 4000, Charlotte, NC 28280-4000 (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, 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).

Published:

— *without international search report and to be republished upon receipt of that report (Rule 48.2(g))*

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

WO 2013/152001 A2

(54) Title: ANTI-HLA-B*27 ANTIBODIES AND USES THEREOF

(57) Abstract: The present invention provides antibodies and antigen-binding fragments thereof that specifically bind HLA-B*27 (also called HLA-B27). In certain embodiments, the antibodies of the invention bind soluble and/or cell surface-expressed forms of HLA-B*27. The antibodies of the present invention, in certain embodiments, inhibit HLA-B*27-mediated activation of T cells. Certain exemplary antibodies of the present invention exhibit enhanced binding to HLA-B*27 as compared to other HLA-B allelic variants (e.g., HLA-B*07). The present invention also provides anti-HLA-B*27 antibodies with pH-dependent binding characteristics (e.g., higher affinity binding at neutral pH than at acidic pH). The antibodies of the invention are useful for the treatment of diseases and disorders associated with HLA-B*27 expression, including ankylosing spondylitis and other spondyloarthropathies.