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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
5 April 2012 (05.04.2012)

PCT

(10) International Publication Number
WO 2012/041968 A1

(51) International Patent Classification:
A61K 39/00 (2006.01) *G01N 33/543* (2006.01)
A61K 39/385 (2006.01) *G01N 33/564* (2006.01)
A61K 47/48 (2006.01)

(21) International Application Number:
PCT/EP2011/066994

(22) International Filing Date:
29 September 2011 (29.09.2011)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/387,873 29 September 2010 (29.09.2010) US

(71) Applicant *(for all designated States except US)*: **UTI LIMITED PARTNERSHIP** [CA/CA]; Suite 130, 3553-31 Street NW, Calgary, Alberta T2L 2K7 (CA).

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: **SANTAMARIA, Pedro** [ES/CA]; c/o UTI Limited Partnership, Suite 130, 3553-31 Street NW, Calgary, Alberta T2L 2K7 (CA).

(74) Agents: **GIBSON, Mark** et al.; Sagittarius IP, Taylor House, 39 High Street, Marlow Buckinghamshire SL7 1AF (GB).

(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,

[Continued on next page]

(54) Title: METHODS FOR TREATING AUTOIMMUNE DISEASE USING BIOCOMPATIBLE BIOABSORBABLE NANOSPHERES

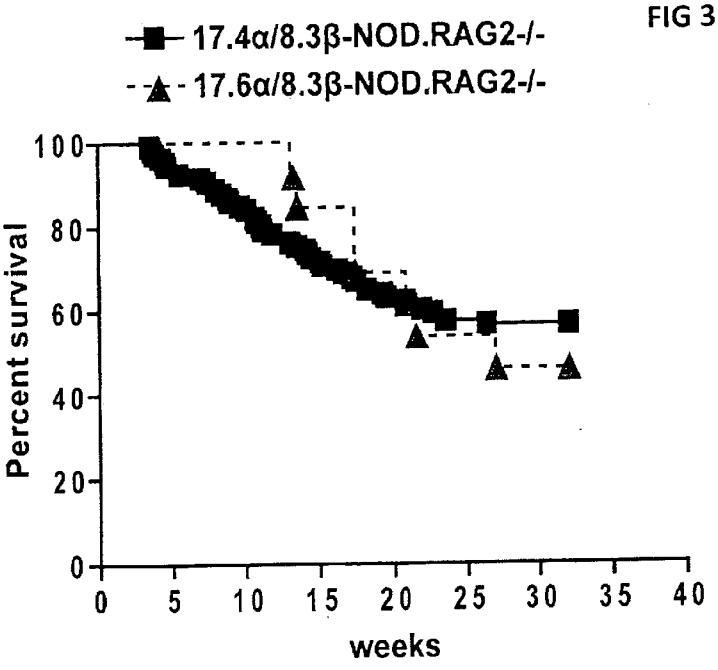


FIG 3

(57) Abstract: The methods include selectively reducing or expanding T cells according to the antigenic specificity of the T cells using biocompatible bioabsorbable nanospheres. Therefore, the present invention can be used to reduce or eliminate pathogenic T cells that recognize autoantigens, such as beta cell specific T cells. As such, the present invention can be used to prevent, treat or ameliorate autoimmune diseases such as IDDM. Furthermore, the present invention can be used to expand desirable T cells, such as anti-pathogenic T cells to prevent, treat and/or ameliorate autoimmune diseases.

WO 2012/041968 A1

SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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

Published:

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