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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
22 September 2011 (22.09.2011)

PCT

(10) International Publication Number
WO 2011/113819 A3

(51) International Patent Classification:
A61K 38/17 (2006.01) *C07K 7/08* (2006.01)
A61K 39/00 (2006.01) *G01N 33/50* (2006.01)
C07K 7/06 (2006.01) *A61P 35/00* (2006.01)

(21) International Application Number:
PCT/EP2011/053863

(22) International Filing Date:
15 March 2011 (15.03.2011)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/315,704 19 March 2010 (19.03.2010) US
1004551.6 19 March 2010 (19.03.2010) GB

(71) Applicant *(for all designated States except US)*: **IMMATICS BIOTECHNOLOGIES GMBH** [DE/DE]; Paul-Ehrlich-Strasse 15, 72076 Tuebingen (DE).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **WEINSCHENK, Toni** [—/DE]; Im Morgenrain 15, 73773 Aichwald (DE). **FRITSCHE, Jens** [DE/DE]; Im Schoenblick 48, 72076 Tuebingen (DE). **WALTER, Steffen** [DE/DE]; Steinenbergstrasse 2, 72764 Reutlingen (DE). **LEWANDROWSKI, Peter** [DE/DE]; Burgstrasse 14, 72070 Tuebingen-Hirschau (DE). **SINGH, Harpreet** [DE/DE]; Bei den Pferdestaellen 9, 72072 Tuebingen (DE).

(74) Agent: **BOEHMERT & BOEHMERT**; Jan B. KRAUSS, Pettenkoferstrasse 20 - 22, 80336 Munich (DE).

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

Published:

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

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

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

(88) Date of publication of the international search report:
10 November 2011

(54) Title: DIAGNOSIS AND TREATMENT OF CANCER BASED ON AVL9

(57) Abstract: The present invention relates to peptides, nucleic acids and cells for use in immunotherapeutic methods. In particular, the present invention relates to the immunotherapy of cancer. The present invention furthermore relates to tumor-associated cytotoxic T cell (CTL) peptide epitopes, alone or in combination with other tumor-associated peptides that serve as active pharmaceutical ingredients of vaccine compositions that stimulate anti-tumor immune responses. The present invention relates to 95 novel peptide sequences and their variants derived from HLA class I molecules of human tumor cells that can be used in vaccine compositions for eliciting anti-tumor immune responses.

WO 2011/113819 A3