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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
2 December 2010 (02.12.2010)

PCT

(10) International Publication Number
WO 2010/137295 A1

(51) International Patent Classification:
*C12N 15/09* (2006.01) *C07K 16/18* (2006.01)
*A61K 39/00* (2006.01) *C12N 5/078* (2010.01)
*A61P 35/00* (2006.01) *C12N 5/0783* (2010.01)
*C07K 14/47* (2006.01) *C12N 5/10* (2006.01)

(21) International Application Number:
PCT/JP2010/003488

(22) International Filing Date:
25 May 2010 (25.05.2010)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/217,133 26 May 2009 (26.05.2009) US

(71) Applicant *(for all designated States except US)*: **ONCOTHERAPY SCIENCE, INC.** [JP/JP]; 2-1, Sakado 3-chome, Takatsu-ku, Kawasaki-shi, Kanagawa, 2130012 (JP).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **NISHIMURA, Yasuharu** [JP/JP]; c/o NATIONAL UNIVERSITY CORPORATION KUMAMOTO UNIVERSITY, 1-1, Honjo 1-chome, Kumamoto-shi, Kumamoto, 8608556 (JP). **TOMITA, Yusuke** [JP/JP]; c/o NATIONAL UNIVERSITY CORPORATION KUMAMOTO UNIVERSITY, 1-1, Honjo 1-chome, Kumamoto-shi, Kumamoto, 8608556 (JP). **NAKAMURA, Yusuke** [JP/JP]; c/o THE UNIVERSITY OF TOKYO, 3-1, Hongo 7-chome, Bunkyo-ku, Tokyo, 1138654 (JP). **TSUNODA, Takuya** [JP/JP]; c/o ONCOTHERAPY SCIENCE, INC., 2-1, Sakado 3-chome, Takatsu-ku, Kawasaki-shi, Kanagawa, 2130012 (JP).

(74) Agents: **SHIMIZU, Hatsushi** et al.; Kantetsu Tsukuba Bldg. 6F, 1-1-1, Oroshi-machi, Tsuchiura-shi, Ibaraki, 3000847 (JP).

(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, 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**:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

**Published**:

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

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

WO 2010/137295 A1

(54) **Title**: CDC45L PEPTIDES AND VACCINES INCLUDING THE SAME

(57) **Abstract**: The present invention provides isolated peptides or the fragments derived from SEQ ID NO: 18, which bind to an HLA antigen and induce cytotoxic T lymphocytes (CTL). The peptides may include one of the above mentioned amino acid sequences with substitution, deletion, or addition of one, two, or several amino acids sequences. The present invention also provides pharmaceutical compositions including these peptides. The peptides of the present invention can be used for treating cancer.