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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
22 November 2001 (22.11.2001)

PCT

(10) International Publication Number
WO 01/87981 A2

(51) International Patent Classification[7]: C07K 16/00

(21) International Application Number: PCT/JP01/04035

(22) International Filing Date: 15 May 2001 (15.05.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2000-147116 18 May 2000 (18.05.2000) JP
2001-99508 30 March 2001 (30.03.2001) JP

(71) Applicant *(for all designated States except US)*: **JAPAN TOBACCO, INC.** [JP/JP]; 2-1, Toranomon 2-chome, Minato-ku, Tokyo 105-8422 (JP).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **TSUJI, Takashi** [JP/JP]; 3-198, Edogawadaihigashi, Nagareyama-shi, Chiba 270-0111 (JP). **TEZUKA, Katsunari** [JP/JP]; c/o Pharmaceutical Frontier Research Laboratories of Japan Tobacco, Inc., 1-13-2, Fukuura, Kanazawa-ku, Yokohama-shi, Kanagawa 236-0004 (JP). **HORI, Nobuaki** [JP/JP]; c/o Pharmaceutical Frontier Research Laboratories of Japan Tobacco, Inc., 1-13-2, Fukuura, Kanazawa-ku, Yokohama-shi, Kanagawa 236-0004 (JP).

(74) Agents: **SHIMIZU, Hatsushi** et al.; Kantetsu Tsukuba Bldg. 6F, 1-1-1, Oroshi-machi, Tsuchiura-shi, Ibaraki 300-0847 (JP).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *without international search report and to be republished upon receipt of that report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 01/87981 A2

(54) Title: HUMAN MONOCLONAL ANTIBODY AGAINST A COSTIMULATORY SIGNAL TRANSDUCTION MOLECULE AILIM AND PHARMACEUTICAL USE THEREOF

(57) Abstract: Immunization of human antibody-producing transgenic mice, which have been created using genetic engineering techniques, with AILIM molecule as an antigen resulted in various human monoclonal antibodies capable of binding to AILIM and capable of controlling a variety of biological reactions (for example, cell proliferation, cytokine production, immune cytolysis, cell death, induction of ADCC, etc.) associated with AILIM-mediated costimulatory signal (secondary signal) transduction. Furthermore, it has been revealed that the human monoclonal antibody is effective to treat and prevent various diseases associated with AILIM-mediated costimulatory signal transduction, being capable of inhibiting the onset and/or advancement of the diseases.