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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
22 December 2005 (22.12.2005)

PCT

(10) International Publication Number
WO 2005/121142 A1

(51) International Patent Classification[7]: C07D 471/04, 487/04

(21) International Application Number: PCT/JP2005/011082

(22) International Filing Date: 10 June 2005 (10.06.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2004-174770 11 June 2004 (11.06.2004) JP
2004-327111 10 November 2004 (10.11.2004) JP

(71) Applicant *(for all designated States except US)*: **JAPAN TOBACCO INC.** [JP/JP]; 2-1, Toranomon 2-chome, Minato-ku, Tokyo, 1058422 (JP).

(71) Applicant and
(72) Inventor: **SAKAI, Toshiyuki** [JP/JP]; 28-11, Kowaki-cho, Matsugasaki, Sakyo-ku, Kyoto-shi, Kyoto 6060957 (JP).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: **KAWASAKI, Hisashi** [JP/JP]; c/o Central Pharmaceutical Research Institute of Japan Tobacco Inc., 1-1, Murasaki-cho, Takatsuki-shi, Osaka, 5691125 (JP). **ABE, Hiroyuki** [JP/JP]; c/o Central Pharmaceutical Research Institute of Japan Tobacco Inc., 1-1, Murasaki-cho, Takatsuki-shi, Osaka, 5691125 (JP). **HAYAKAWA, Kazuhide** [JP/JP]; c/o Central Pharmaceutical Research Institute of Japan Tobacco Inc., 1-1, Murasaki-cho, Takatsuki-shi, Osaka, 5691125 (JP). **IIDA, Tetsuya** [JP/JP]; c/o Central Pharmaceutical Research Institute of Japan Tobacco Inc., 1-1, Murasaki-cho, Takatsuki-shi, Osaka, 5691125 (JP). **KIKUCHI, Shinichi** [JP/JP]; c/o Central Pharmaceutical Research Institute of Japan Tobacco Inc., 1-1, Murasaki-cho, Takatsuki-shi, Osaka, 5691125 (JP). **YAMAGUCHI, Takayuki** [JP/JP]; c/o Central Pharmaceutical Research Institute of Japan Tobacco Inc., 1-1, Murasaki-cho, Takatsuki-shi, Osaka, 5691125 (JP). **NANAYAMA, Toyomichi** [JP/JP]; c/o Central Pharmaceutical Research Institute of Japan Tobacco Inc., 1-1, Murasaki-cho, Takatsuki-shi, Osaka, 5691125 (JP). **KURACHI, Hironori** [JP/JP]; c/o Central Pharmaceutical Research Institute of Japan Tobacco Inc., 1-1, Murasaki-cho, Takatsuki-shi, Osaka, 5691125 (JP). **TAMARU, Masahiro** [JP/JP]; c/o Central Pharmaceutical Research Institute of Japan Tobacco Inc., 1-1, Murasaki-cho, Takatsuki-shi, Osaka, 5691125 (JP). **HORI, Yoshikazu** [JP/JP]; c/o Central Pharmaceutical Research Institute of Japan Tobacco Inc., 1-1, Murasaki-cho, Takatsuki-shi, Osaka, 5691125 (JP). **TAKAHASHI, Mitsuru** [JP/JP]; c/o Central Pharmaceutical Research Institute of Japan Tobacco Inc., 1-1, Murasaki-cho, Takatsuki-shi, Osaka, 5691125 (JP). **YOSHIDA, Takayuki** [JP/JP]; c/o Pharmaceutical Frontier Research Laboratories, Central Pharmaceutical Research Institute, Japan Tobacco Inc., 13-2, Fukuura 1-chome, Kanazawa-ku, Yokohama-shi, Kanagawa, 2360004 (JP).

(74) Agent: **TAKASHIMA, Hajime**; Meiji Yasuda Seimei Osaka Midosuji Bldg., 1-1, Fushimimachi 4-chome, Chuo-ku, Osaka-shi, Osaka 5410044 (JP).

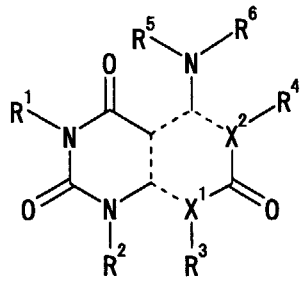
(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH,

[Continued on next page]

WO 2005/121142 A1

(54) Title: 5-AMINO-2,4,7-TRIOXO-3,4,7,8-TETRAHYDRO-2H-PYRIDO'2,3-D! PYRIMIDINE DERIVATIVES AND RELATED COMPOUNDS FOR THE TREATMENT OF CANCER



[I]

(57) Abstract: The present invention relates to a pyrimidine compound represented by the following formula [I] wherein each symbol is as defined in the specification, a pharmaceutically acceptable salt thereof, and a pharmaceutical agent for the prophylaxis or treatment of a disease caused by undesirable cell proliferation, particularly an antitumor agent, which contains such compound. The compound of the present invention has superior undesirable cell proliferation suppressing action, particularly, an antitumor action, and is useful as an antitumor agent for the prophylaxis or treatment of cancer, antirheumatoid agent and the like. In addition, by the combined use with other antitumor agent such as alkylating agent, metabolism antagonist and the like, it can be a more effective antitumor agent.

GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search 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.