

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
20 November 2008 (20.11.2008)

PCT

(10) International Publication Number
WO 2008/140090 A1

(51) International Patent Classification:
C07D 407/12 (2006.01) *C07D 498/04* (2006.01)

(21) International Application Number:
PCT/JP2008/058798

(22) International Filing Date: 7 May 2008 (07.05.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2007-123097 8 May 2007 (08.05.2007) JP

(71) Applicant (for all designated States except US): **OTSUKA PHARMACEUTICAL CO., LTD.** [JP/JP];
9, Kanda-Tsukasamachi 2-chome, Chiyoda-ku, Tokyo 1018535 (JP).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **TSUBOUCHI, Hidetsugu** [JP/JP]; c/o Otsuka Pharmaceutical Co., Ltd., 1-7-1 Doshomachi, Chuo-ku, Osaka-shi, Osaka, 5410045 (JP). **HARAGUCHI, Yoshikazu** [JP/JP]; c/o Otsuka Pharmaceutical Co., Ltd., 1-7-1 Doshomachi, Chuo-ku, Osaka-shi, Osaka, 5410045 (JP). **HAYAKAWA, Satoshi** [JP/JP]; c/o Otsuka Pharmaceutical Co., Ltd., 1-7-1 Doshomachi, Chuo-ku, Osaka-shi, Osaka, 5410045 (JP). **UTSUMI, Naoto** [JP/JP]; c/o Otsuka Pharmaceutical Co., Ltd., 1-7-1 Doshomachi, Chuo-ku, Osaka-shi, Osaka, 5410045 (JP). **TAIRA, Shinichi** [JP/JP]; c/o Otsuka Pharmaceutical Co., Ltd., 1-7-1 Doshomachi, Chuo-ku, Osaka-shi, Osaka, 5410045 (JP). **TANADA, Yoshihisa** [JP/JP]; c/o Otsuka Pharmaceutical Co., Ltd., 1-7-1 Doshomachi, Chuo-ku, Osaka-shi, Osaka, 5410045 (JP). **FUJITA, Nobuhisa** [JP/JP]; c/o Otsuka Pharmaceutical

Co., Ltd., 1-7-1 Doshomachi, Chuo-ku, Osaka-shi, Osaka, 5410045 (JP). **SHINHAMA, Koichi** [JP/JP]; c/o Otsuka Pharmaceutical Co., Ltd., 1-7-1 Doshomachi, Chuo-ku, Osaka-shi, Osaka, 5410045 (JP). **ANNAKA, Kimiyoshi** [JP/JP]; c/o Otsuka Pharmaceutical Co., Ltd., 1-7-1 Doshomachi, Chuo-ku, Osaka-shi, Osaka, 5410045 (JP). **FURUTA, Takuya** [JP/JP]; c/o Otsuka Pharmaceutical Co., Ltd., 1-7-1 Doshomachi, Chuo-ku, Osaka-shi, Osaka, 5410045 (JP).

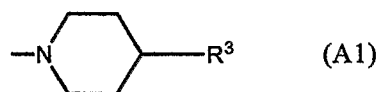
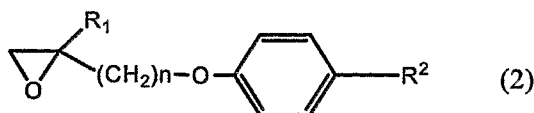
(74) Agents: **ASAMURA, Kiyoshi** et al.; Room 331, New Ohtemachi Bldg., 2-1, Ohtemachi 2-chome, Chiyoda-ku, Tokyo 1000004 (JP).

(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, 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, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, 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, 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, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, 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

(54) Title: EPOXY COMPOUND AND METHOD FOR MANUFACTURING THE SAME



(57) Abstract: The present invention provides a novel intermediate for manufacturing a 2,3-dihydroimidazo[2,1-b]oxazole compound with a high yield and a high purity, and a manufacturing method of the intermediate. The present invention provides an epoxy compound represented by the general formula (2): wherein, R1 represents hydrogen or a lower alkyl group; and R2 represents a piperidyl group represented by the general formula (A1): (wherein, R3 represents a phenoxy group having a halogen-substituted lower alkoxy group substituted on a phenyl group, and the like) and the like; and n represents an integer of 1 to 6, a manufacturing method of the epoxy compound, and a manufacturing method of an oxazole compound using the epoxy compound.