

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
3 April 2008 (03.04.2008)

PCT

(10) International Publication Number
WO 2008/038810 A1

(51) International Patent Classification:
C12P 11/00 (2006.01)

(74) Agents: TANAKA, Mitsuo et al.; AOYAMA & PARTNERS, IMP Building, 3-7, Shiromi 1-chome, Chuo-ku, Osaka-shi, Osaka 5400001 (JP).

(21) International Application Number:
PCT/JP2007/069126

(22) International Filing Date:
21 September 2007 (21.09.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2006-258452 25 September 2006 (25.09.2006) JP
2007-012349 23 January 2007 (23.01.2007) JP

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, 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, 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, HU, IE, IS, IT, LT, LU, LV, MC, MT, 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).

(71) Applicant (for all designated States except US): SUMITOMO CHEMICAL COMPANY, LIMITED [JP/JP]; 27-1, Shinkawa 2-chome, Chuo-ku, Tokyo, 1048260 (JP).

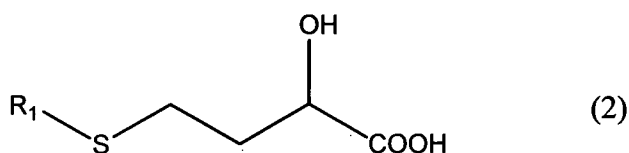
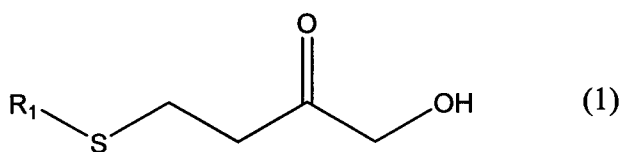
(72) Inventors; and

(75) Inventors/Applicants (for US only): ASAKO, Hiroyuki [JP/JP]; 2-11-7-206, Sonehigashino-cho, Toyonaka-shi, Osaka, 5610802 (JP). HAGIYA, Koji [JP/JP]; 5-4-405, Gakuen-cho, Ibaraki-shi, Osaka, 5670833 (JP).

Published:

— with international search report

(54) Title: PROCESS FOR THE PREPARATION OF 2-HYDROXY-4- (ALKYLTHIO OR ARYLTHIO) BUTANOIC ACID BY MICROBIAL CONVERSION OF 2-OXO-4- (ALKYLTHIO OR ARYLTHIO) 1-BUTANOL EMPLOYING BACTERIA OF THE GENUS PSEUDOMONAS, RHODOCOCCUS, OR BACILLUS



(57) Abstract: There is provided is a process for producing a sulfur-containing α -hydroxycarboxylic acid compound represented by the formula (2): wherein R_1 represents hydrogen, C_{1-8} alkyl, or C_{6-20} aryl, which comprises subjecting a sulfur-containing ketol represented by the formula (1): wherein R_1 is the same as defined above, to the action of microbial cells of a microorganism belonging to the genus *Pseudomonas*, *Rhodococcus* or *Bacillus* capable of converting the ketol into a corresponding α -hydroxycarboxylic acid compound, or a treated material thereof, thereby producing the sulfur-containing α -hydroxycarboxylic acid without using a hydroxynitrile compound as a starting material.