

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
9 October 2003 (09.10.2003)

PCT

(10) International Publication Number
WO 03/082841 A1

(51) International Patent Classification⁷: **C07D 285/10**,
A61K 31/433, A61P 3/10, C07D 417/06

(21) International Application Number: PCT/EP03/03466

(22) International Filing Date: 2 April 2003 (02.04.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/369,930 3 April 2002 (03.04.2002) US
60/369,779 3 April 2002 (03.04.2002) US

(71) Applicant (for all designated States except AT, US): **NOVARTIS AG** [CH/CH]; Lichtstrasse 35, CH-4056 Basel (CH).

(71) Applicant (for AT only): **NOVARTIS PHARMA GMBH** [AT/AT]; Brunner Strasse 59, A-1230 Vienna (AT).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **COPPOLA, Gary, Mark** [US/US]; 18 Aldersgate Circle, Budd Lake, NJ 07828 (US). **DAVIES, John, William** [US/US]; 124 Gates Avenue, Montclair, NJ 07042 (US). **JEWELL, Charles, Francis, Jr.** [US/US]; 38 Lakewood Drive, Sudbury, MA 01776 (US). **LI, Yu-Chin** [US/US]; 3 Hawthorn Drive, Edison, NJ 08820 (US). **WAREING, James, Richard** [US/US]; 422 Millbrook Avenue, Randolph, NJ 07869 (US). **SPERBECK, Donald, Mark** [US/US]; 16

Helen Way, Berkeley Heights, NJ 07922 (US). **STAMS, Travis, Mathew** [US/US]; 21 Hudnut Lane, Belle Mead, NJ 08502 (US). **TOPIOL, Sidney, Wolf** [US/US]; 15 Lafayette Place, Fair Lawn, NJ 07410 (US). **VLATTAS, Isidoros** [US/US]; 131 Butler Parkway, Summit, NJ 07901 (US).

(74) Agent: **GROS, Florent**; Novartis AG, Corporate Intellectual Property, CH-4002 Basel (CH).

(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, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LT, LU, LV, MA, MD, MK, MN, MX, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SE, SG, SK, TJ, TM, TN, TR, TT, UA, US, UZ, VC, VN, YU, ZA, ZW.

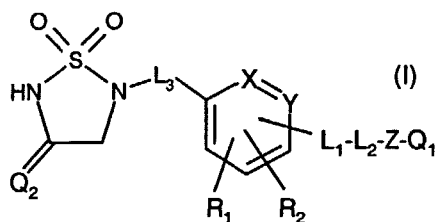
(84) Designated States (regional): Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

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.

(54) Title: 5-SUBSTITUTED 1,1-DIOXO-1,2,5-THIAZOLIDINE-3-ONE DERIVATIVES AS PTPASE 1B INHIBITORS



(57) Abstract: Compounds of the formula (I) provide pharmacological agents which are inhibitors of PTPases, in particular, the compounds of formula (I) inhibit PTP-1 B and TC PTP, and thus may be employed for the treatment of conditions associated with PTPase activity. The compounds of the present invention may also be employed for inhibition of other enzymes with a phosphotyrosine binding region such as the SH2 domain. Accordingly, the compounds of formula (I) may be employed for prevention or treatment of insulin resistance associated with obesity, glucose intolerance, diabetes mellitus, hypertension and ischemic diseases of the large and small blood vessels. The compounds of the present invention may

also be employed in the treatment, prevention or control of a number of conditions that accompany Type 2 diabetes, including hyperlipidemia, hypertriglyceridemia, atherosclerosis, vascular restenosis, irritable bowel syndrome, pancreatitis, adipose cell tumors and carcinomas such as liposarcoma, dyslipidemia, and other disorders where insulin resistance is indicated. In addition, the compounds of the present invention may be employed to treat or prevent cancer, osteoporosis, neurodegenerative and infectious diseases, and diseases involving inflammation and the immune system.