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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
29 September 2011 (29.09.2011)

PCT

(10) International Publication Number
WO 2011/118976 A2

(51) International Patent Classification:
A61K 31/496 (2006.01) *A61P 1/16* (2006.01)
A61K 31/401 (2006.01) *A61P 1/00* (2006.01)

(21) International Application Number:
PCT/KR2011/001988

(22) International Filing Date:
23 March 2011 (23.03.2011)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10-2010-0026134 24 March 2010 (24.03.2010) KR

(71) Applicant *(for all designated States except US)*: **DONG-A PHARM. CO., LTD.** [KR/KR]; 252, Yongdu-dong, Dongdaemun-gu, Seoul 130-823 (KR).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **AN, Gook-Jun** [KR/KR]; 115, Deokbong-ri, Yangseong-myeon, Anseong-si, Gyeonggi-do 456-933 (KR). **YANG, Eun-Kyoung** [KR/KR]; 202, 1602-15, Nakseongdae-dong, Gwanak-gu, Seoul 151-835 (KR). **CHO, Eun-Jung** [KR/KR]; 101-1201, Kumho Eoullim Apt., Yeoksam 1-dong, Gangnam-gu, Seoul 135-081 (KR). **CHAE, Yu-Na** [KR/KR]; 231-1604, Sungwon 3-Cha SsangtteVill Apt., Sanghyeon 1-dong, Suji-gu, Yongin-si, Gyeonggi-do 448-519 (KR). **CHOI, Song-Hyen** [KR/KR]; 604, Heesung Yeonin Apt., Maetan 2-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do 443-372 (KR). **KIM, Ha-Dong** [KR/KR]; 709-1902, Bugae Jugong Apt., Bugae 2-dong, Bupyeong-gu, Incheon 403-725 (KR). **SHIN, Chang-Yell** [KR/KR]; 303-605, Woosung 3-Cha Apt., Jayang 3-dong, Gwangjin-gu, Seoul 143-773 (KR). **KIM, Mi-Kyung** [KR/KR]; 434-1804, Cheongmyeong Samsung Apt., Yeongtong-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do 443-470 (KR). **KWAK, Woo-Young** [KR/KR]; 105-306, Yongin Xi Apt., Mapyeong-dong, Cheoin-gu, Yongin-si, Gyeonggi-do 449-040 (KR). **KIM, Heung-Jae** [KR/KR]; 220-1201, Sibeom Woosung Apt., Seohyeon-dong, Bundang-gu, Seongnam-si, Gyeonggi-do 463-050 (KR). **SON, Moon-Ho** [KR/KR]; 202-702, Prugio Apt., 623, Pangyo-dong, Bundang-gu, Seongnam-si, Gyeonggi-do 463-410 (KR). **KIM, Soon-Hoe** [KR/KR]; 316-702, Cheongmyeong Maeul Dongsin Apt., Yeongtong-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do 443-470 (KR).

(74) Agent: **AHN, So-Young**; Dr. Ahn International Patent Law Office, 10th Fl., Shinseung Bldg., 1676-1, Seocho-dong,Seocho-gu, Seoul 137-881 (KR).

(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, CL, 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, 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, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, 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, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *without international search report and to be republished upon receipt of that report (Rule 48.2(g))*

WO 2011/118976 A2

(54) Title: PHARMACEUTICAL COMPOSITION FOR THE PREVENTION OR THE TREATMENT OF NON-ALCOHOLIC FATTY LIVER DISEASE AND THE METHOD FOR PREVENTION OR TREATMENT OF NON-ALCOHOLIC FATTY LIVER DISEASE USING THE SAME

(57) Abstract: The present invention provides a pharmaceutical composition for the prevention and treatment of a non-alcoholic fatty liver disease (NAFLD), containing an active ingredient selected from the group consisting of Compound 1 represented by formula 1, sitagliptin, vildagliptin, linagliptin or a pharmaceutically acceptable salt thereof. Further, the present invention provides a method for the prevention or treatment of a non-alcoholic fatty liver disease, including administering an effective amount of an active ingredient selected from the group consisting of Compound 1 represented by formula 1, sitagliptin, vildagliptin, linagliptin or a pharmaceutically acceptable salt thereof to a mammal including a human in need thereof. Further, the present invention provides use of Compound 1 represented by formula 1, sitagliptin, vildagliptin, linagliptin or a pharmaceutically acceptable salt thereof, for manufacturing a pharmaceutical composition for the prevention or treatment of a non-alcoholic fatty liver disease.