



(51) International Patent Classification:

C07D 209/08 (2006.01) **C07D 401/14** (2006.01)
C07D 211/58 (2006.01) **C07D 403/12** (2006.01)
C07D 213/74 (2006.01) **C07D 405/12** (2006.01)
C07D 213/84 (2006.01) **C07D 405/14** (2006.01)
C07D 231/56 (2006.01) **C07D 413/12** (2006.01)
C07D 235/06 (2006.01) **C07D 417/12** (2006.01)
C07D 277/24 (2006.01) **C07D 471/04** (2006.01)
C07D 309/04 (2006.01)

(21) International Application Number:

PCT/US2010/036844

(22) International Filing Date:

1 June 2010 (01.06.2010)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

12/631,367 4 December 2009 (04.12.2009) US

(71) Applicant (for all designated States except US): **ABBOTT LABORATORIES** [US/US]; 100 Abbott Park Road, Abbott Park, Illinois 60064 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **BRUNCKO, Milan** [US/US]; 31231 Prairie Ridge, Green Oaks, Illinois 60048 (US). **DAI, Yujia** [US/US]; 1557 Camden Drive, Gurnee, Illinois 60031 (US). **DING, Hong** [CN/US]; 7465 Clem Drive, Gurnee, Illinois 60031 (US). **DOHERTY, George A.** [US/US]; 1605 Bush Court, Libertyville, Illinois 60048 (US). **ELMORE, Steven W.** [US/US]; 239 Ash Lane, Northbrook, Illinois 60062 (US). **HASVOLD, Lisa** [US/US]; 552 Shakespeare Drive, Grayslake, Illinois 60030 (US). **HEXAMER, Laura** [US/US]; 439 Gatewood Lane, Grayslake, Illinois 60030 (US). **KUNZER, Aaron** [US/US]; 615 W. Burr Oak Drive, Arlington Heights, Illinois 60004 (US). **MANTEL, Robert**

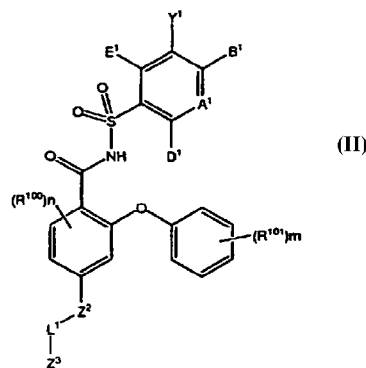
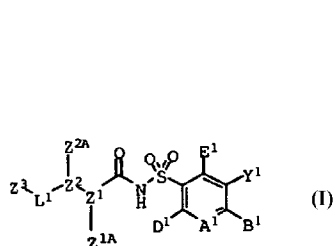
A. [US/US]; 4203 Carolyn Court, Franklin, Wisconsin 53132 (US). **McCLELLAN, William J.** [US/US]; 1212 North Sheridan Road, Waukegan, Illinois 60085 (US). **PARK, Chang H.** [US/US]; 2871 North Southern Hills, Wadsworth, Illinois 60083 (US). **PARK, Cheol-Min** [KR/US]; 5312 F. George Court, Gurnee, Illinois 60031 (US). **PETROS, Andrew M.** [US/US]; 940 Ambria Drive, Mundelein, Illinois 60060 (US). **SONG, Xiaohong** [CN/US]; 34037 Sulkey Drive, Grayslake, Illinois 60030 (US). **SOUERS, Andrew J.** [US/US]; 901 Hinman, Apt. 3A, Evanston, Illinois 60202 (US). **SULLIVAN, Gerard M.** [US/US]; 1212 Tulip Tree Court, Lake Villa, Illinois 60046 (US). **TAO, Zhi-Fu** [CN/US]; 1532 Vineyard Drive, Gurnee, Illinois 60031 (US). **WANG, Gary T.** [US/US]; 1904 Darnell Street, Libertyville, Illinois 60048 (US). **WANG, Le** [US/US]; 338 East Colonial Drive, Vernon Hills, Illinois 60061 (US). **WANG, Xilu** [US/US]; 34056 Sulkey Drive, Grayslake, Illinois 60030 (US). **WENDT, Michael D.** [US/US]; 1445 Maidstone Drive, Vernon Hills, Illinois 60061 (US). **HANSEN, Todd M.** [US/US]; 191 Seymour Avenue, Grayslake, Illinois 60030 (US).

(74) Agents: **MUELLER, Lisa, V.** et al.; Polsinelli Shughart PC, 161 N. Clark Street, Suite 4200, Chicago, Illinois 60601 (US).

(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, 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, 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.

[Continued on next page]

(54) Title: APOPTOSIS-INDUCING AGENTS FOR THE TREATMENT OF CANCER AND IMMUNE AND AUTOIMMUNE DISEASES



(57) Abstract: Disclosed are compounds which inhibit the activity of anti-apoptotic Bcl-2 proteins, compositions containing the compounds and methods of treating diseases during which is expressed anti-apoptotic Bcl-2 protein.



(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, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- *as to the identity of the inventor (Rule 4.17(i))*
- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

Published:

- *with international search report (Art. 21(3))*