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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
10 June 2010 (10.06.2010)

PCT

(10) International Publication Number
WO 2010/065496 A1

(51) International Patent Classification:
A61K 39/395 (2006.01) *C07K 16/28* (2006.01)

(21) International Application Number:
PCT/US2009/066187

(22) International Filing Date:
1 December 2009 (01.12.2009)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/120,076 5 December 2008 (05.12.2008) US
61/239,818 4 September 2009 (04.09.2009) US

(71) Applicant *(for all designated States except US)*: **ELI LILLY AND COMPANY** [US/US]; Lilly Corporate Center, Indianapolis, Indiana 46285 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **LEUNG, Donmienne, Doen, Mun** [AU/US]; 4427 41st Street, San Diego, California 92116 (US). **LUAN, Peng** [US/US]; 3020 Dublin Drive, South San Francisco, California 94080 (US). **MANETTA, Joseph, Vincent** [US/US]; Eli Lilly and Company, Lilly Corporate Center, Indianapolis, Indiana 46285 (US). **TANG, Ying** [CN/US]; 7179 Park Village Road, San Diego, California 92129 (US). **WITCHER, Derrick, Ryan** [US/US]; Eli Lilly and Company, Lilly Corporate Center, Indianapolis, Indiana 46285 (US).

(74) Agents: **SHARP, Robert, L.** et al.; Eli Lilly and Company, Patent Division, P. O. Box 6288, Indianapolis, Indiana 46206-6288 (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, 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,

[Continued on next page]

(54) Title: ANTI-FERROPORTIN 1 MONOCLONAL ANTIBODIES AND USES THEREOF

(57) Abstract: Provided are monoclonal antibodies and antigen-binding fragments thereof that bind to, and inhibit the activity of human FPN1, and which are effective in maintaining or increasing the transport of iron out of mammalian cells and/or maintaining or increasing the level of serum iron, reticulocyte count, red blood cell count, hemoglobin, and/or hematocrit in a subject *in vivo*.

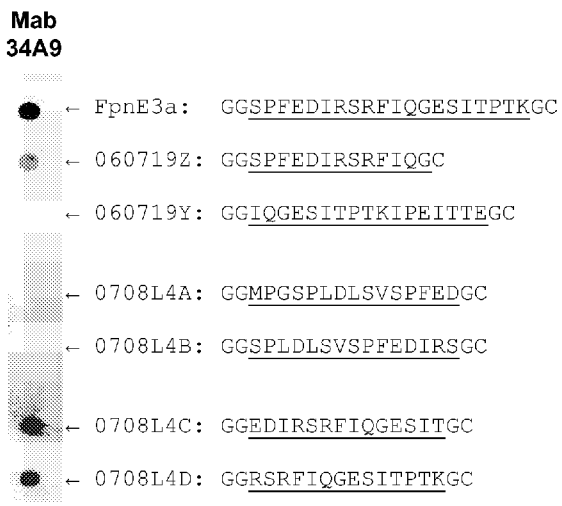


FIGURE 1

WO 2010/065496 A1

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 applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

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

— *with sequence listing part of description (Rule 5.2(a))*