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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
13 October 2005 (13.10.2005)

PCT

(10) International Publication Number
WO 2005/094357 A2

(51) International Patent Classification: Not classified

(21) International Application Number:
PCT/US2005/010645

(22) International Filing Date: 31 March 2005 (31.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/558,218	31 March 2004 (31.03.2004)	US
60/561,095	9 April 2004 (09.04.2004)	US
60/565,753	27 April 2004 (27.04.2004)	US
60/565,985	27 April 2004 (27.04.2004)	US
60/574,035	25 May 2004 (25.05.2004)	US
60/577,916	7 June 2004 (07.06.2004)	US
60/592,287	29 July 2004 (29.07.2004)	US

(71) Applicants *(for all designated States except US)*: **THE GENERAL HOSPITAL CORPORATION** [US/US]; 55 Fruit Street, Boston, MA 02114 (US). **DANA-FARBER CANCER INSTITUTE, INC.** [US/US]; 44 Binney Street, Boston, MA 02115 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **BELL, Daphne, Winifred** [GB/US]; 7 Arizona Terrace, Apartment #3, Arlington, MA 02474 (US). **HABER, Daniel, A.** [US/US]; 34 Monadnock Rd., Chestnut Hill, MA 02467 (US). **JANNE, Pasi, Antero** [US/US]; 128 Roundwood Road, Newton, MA 02464 (US). **JOHNSON, Bruce, E.** [US/US]; 80 Seaver Street, Brookline, MA 02445 (US). **LYNCH, Thomas, J.** [US/US]; 131 Prince Street, Newton, MA 02465 (US). **MEYERSON, Matthew** [US/US]; 307 Independence Road, Concord, MA 01742 (US). **PAEZ, Juan, Guillermo** [AR/US]; 352 Riverway #22, Boston, MA 02115 (US). **SELLERS, William, R.** [US/US]; 80 Seaver Street, Brookline, MA 02445 (US). **SETTLEMAN, Jeffrey, E.** [US/US]; 140 Waverly Avenue, Newton, MA 02458 (US). **SORDELLA, Raffaella** [IT/US]; 38 Sunset Road, Bedford, MA 01730 (US).

(74) Agent: **RESNICK, David, S.**; Nixon Peabody LLP, 100 Summer Street, Boston, MA 02110-2131 (US).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,

[Continued on next page]

(54) Title: METHOD TO DETERMINE RESPONSIVENESS OF CANCER TO EPIDERMAL GROWTH FACTOR RECEPTOR TARGETING TREATMENTS



(57) Abstract: The present invention is directed to a method for determining the responsiveness of cancer to an epidermal growth factor receptor (EGFR) treatment. In a preferred embodiment, the presence of at least one variance in the kinase domain of the erbB 1 gene confers sensitivity to the tyrosine kinase inhibitor gefitinib. Thus, a diagnostic assay for these mutations will allow for the administration of gefitinib, erlotinib and other tyrosine kinase inhibitors to those patients most likely to respond to the drug.

WO 2005/094357 A2

GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, 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, MC, 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).

Published:

— *without international search report and to be republished upon receipt of that report*

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.