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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
24 February 2011 (24.02.2011)

PCT

(10) International Publication Number
WO 2011/022727 A2

(51) International Patent Classification:
A61K 39/395 (2006.01)

(21) International Application Number:
PCT/US2010/046364

(22) International Filing Date:
23 August 2010 (23.08.2010)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/235,799 21 August 2009 (21.08.2009) US

(71) Applicant *(for all designated States except US)*: **MERRIMACK PHARMACEUTICALS, INC.** [US/US]; One Kendall Square, Suite B7201, Cambridge, MA 02139 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **SCHOEBERL, Birgit** [DE/US]; 324 Windsor Street, Cambridge, MA 02141 (US). **NIELSEN, Ulrik** [DK/US]; 18 Thomas Street, Quincy, MA 02169 (US). **FELDHAUS, Michael** [US/US]; P.O. Box 1888, Grantham, NH 03753 (US).

(74) Agents: **REMILLARD, Jane, E.** et al.; Lahive & Cockfield, LLP, One Post Office Square, Boston, MA 02109-2127 (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.

(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).

Published:

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

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

WO 2011/022727 A2

(54) **Title**: ANTIBODIES AGAINST THE ECTODOMAIN OF ERBB3 AND USES THEREOF

(57) **Abstract**: The present invention provides a novel class of antibodies and antigen binding fragments thereof that bind the extracellular domain of ErbB3 receptor and inhibit various ErbB3 functions. For example, the antibodies and antigen binding fragments described herein are capable of binding to the receptor designated ErbB3 and inhibiting EGF-like ligand mediated phosphorylation of the receptor. Such antibodies and antigen binding fragments thereof have the useful characteristic of inhibiting the proliferation of cancer cells expressing ErbB3.