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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
12 July 2007 (12.07.2007)

PCT

(10) International Publication Number
WO 2007/079130 A2

(51) International Patent Classification:
A61K 38/16 (2006.01)

(21) International Application Number:
PCT/US2006/049397

(22) International Filing Date:
27 December 2006 (27.12.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/755,711	30 December 2005 (30.12.2005)	US
60/755,018	30 December 2005 (30.12.2005)	US
60/755,338	30 December 2005 (30.12.2005)	US

(71) Applicant *(for all designated States except US)*: **AMBRX, INC.** [US/US]; 10975 N. Torrey Pines Road, Suite 100, La Jolla, CA 92037 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **MIAO, Zhenwei** [CN/US]; 15887 Sunnyfield Place, San Diego, CA 92127 (US). **LIU, Junjie** [CN/US]; 5004 Field Street, San Diego, CA 92110 (US).

(74) Agents: **CHEN, Shirley** et al.; Wilson Sonsini Goodrich & Rosati, 650 Page Mill Road, Palo Alto, CA 94304-1050 (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, 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, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, 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, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, 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.

WO 2007/079130 A2

(54) Title: COMPOSITIONS CONTAINING, METHODS INVOLVING, AND USES OF NON-NATURAL AMINO ACIDS AND POLYPEPTIDES

(57) Abstract: Disclosed herein are non-natural amino acids and polypeptides that include at least one non-natural amino acid, and methods for making such non-natural amino acids and polypeptides. The non-natural amino acids, by themselves or as a part of a polypeptide, can include a wide range of possible functionalities, but typical have at least one heterocycle, aldol-based, dicarbonyl, and/or diamine group. Also disclosed herein are non-natural amino acid polypeptides that are further modified post-translationally, methods for effecting such modifications, and methods for purifying such polypeptides. Typically, the modified non-natural amino acid polypeptides include at least one heterocycle, aldol-based, dicarbonyl, and/or diamine group. Further disclosed are methods for using such non-natural amino acid polypeptides and modified non-natural amino acid polypeptides, including therapeutic, diagnostic, and other biotechnology uses.