

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
23 July 2020 (23.07.2020)



(10) International Publication Number
WO 2020/150125 A1

(51) International Patent Classification:

C12N 9/10 (2006.01) *C12N 15/63* (2006.01)
C12N 15/09 (2006.01) *C12P 13/04* (2006.01)
C12N 15/54 (2006.01) *C12Q 1/52* (2006.01)

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

(21) International Application Number:

PCT/US2020/013288

(22) International Filing Date:

13 January 2020 (13.01.2020)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

62/792,518 15 January 2019 (15.01.2019) US

(71) Applicant: **CODEXIS, INC.** [US/US]; 200 Penobscot Drive, Redwood City, California 94063 (US).

(72) Inventors: **NAZOR, Jovana**; 200 Penobscot Drive, Redwood City, California 94063 (US). **MICKLITSCH, Christopher, Michael**; 744 S. Harshaw St., Philadelphia, Pennsylvania 19146 (US). **DUAN, Da**; 200 Penobscot Drive, Redwood City, California 94063 (US). **SOW-ELL-KANTZ, Auric, Anthony**; 200 Penobscot Drive, Redwood City, California 94063 (US). **MILLER, Steven**; 126 East Lincoln Avenue, Rahway, New Jersey 07065 (US). **KOSJEK, Birgit**; 126 East Lincoln Avenue, Rahway, New Jersey 07065 (US). **FARASAT, Iman**; 126 East Lincoln Avenue, Rahway, New Jersey 07065 (US). **MARSHALL, Nicholas, M.**; 126 East Lincoln Avenue, Rahway, New Jersey 07065 (US).

(74) Agent: **NEELY WILLIS, Melanie** et al.; Codexis, Inc., 200 Penobscot Drive, Redwood City, California 94063 (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, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, 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, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))
- with sequence listing part of description (Rule 5.2(a))

(54) Title: ENGINEERED TRANSAMINASE POLYPEPTIDES

(57) Abstract: The present invention provides engineered transaminase polypeptides and compositions thereof, as well as polynucleotides encoding the engineered transaminase polypeptides. Methods for producing transaminase enzymes are also provided. In some embodiments, the engineered transaminase polypeptides are optimized to provide improved enzyme properties under minimal aqueous conditions in wet organic solvents.



WO 2020/150125 A1