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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
26 November 2020 (26.11.2020)

WIPO | PCT

(10) International Publication Number
WO 2020/234200 A1

(51) International Patent Classification:
C12N 9/12 (2006.01) *C12N 15/52* (2006.01)
C12P 19/34 (2006.01)

(21) International Application Number:
PCT/EP2020/063740

(22) International Filing Date:
15 May 2020 (15.05.2020)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
62/849,252 17 May 2019 (17.05.2019) US

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(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, 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).

(54) Title: PHI29 DNA POLYMERASE MUTANTS WITH IMPROVED PRIMER RECOGNITION

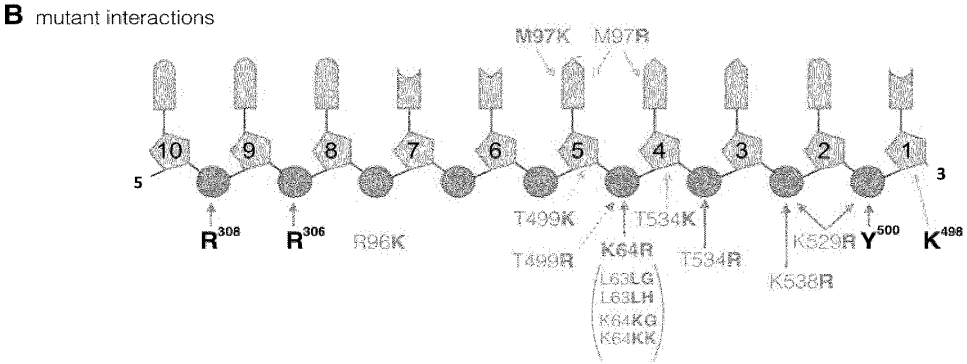


Figure 2

(57) Abstract: Disclosed herein are mutants of bacteriophage Phi29 DNA polymerase with improved primer recognition, compared to the wild-type enzyme. Certain mutants comprise one or both of the mutations K64R or M97K. The provided mutants are capable of using more efficiently shorter and longer random synthetic DNA primers than wild-type Phi29 DNA polymerase, generating more amplification product in Multiple Displacement Amplification (MDA) reactions. The inventive mutants amplify human genomic DNA with less bias and better coverage in comparison to reactions carried out with wild-type Phi29 DNA polymerase.

WO 2020/234200 A1

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Published:
— *with international search report (Art. 21(3))*
— *with sequence listing part of description (Rule 5.2(a))*