

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
02 January 2020 (02.01.2020)



(10) International Publication Number
WO 2020/006036 A1

(51) International Patent Classification:
C12Q 1/6844 (2018.01)

(21) International Application Number:
PCT/US2019/039167

(22) International Filing Date:
26 June 2019 (26.06.2019)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
62/690,257 26 June 2018 (26.06.2018) US
62/767,052 14 November 2018 (14.11.2018) US
62/818,650 14 March 2019 (14.03.2019) US

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(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM,

(54) Title: CRISPR EFFECTOR SYSTEM BASED AMPLIFICATION METHODS, SYSTEMS, AND DIAGNOSTICS

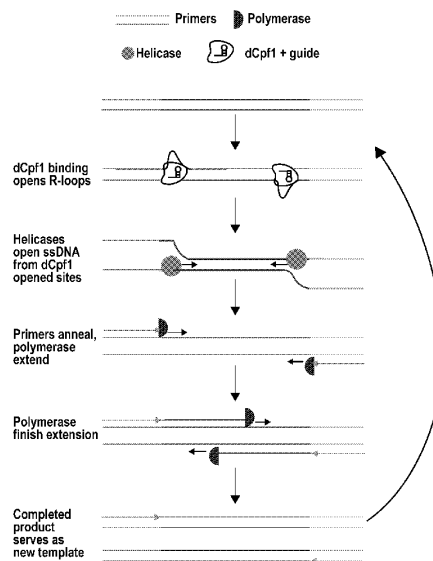


FIG. 2

(57) Abstract: Provided herein are methods and systems for amplifying and/or detecting target double-stranded or single-stranded nucleic acids. The methods comprise combining a sample comprising the target nucleic acid with an amplification reaction mixture, amplifying the target nucleic acid, and further amplifying the target nucleic acid by repeated opening, unwinding, annealing and extension under isothermal conditions. The amplification reaction mixture may include an amplification CRISPR system, a helicase, a primer pair, and a polymerase. The amplification CRISPR system may comprise a first and second CRISPR/Cas complex, the first and second CRISPR/Cas complex may comprise a first CRISPR/Cas enzyme and a first guide molecule that guides the first CRISPR/Cas complex to a first strand of the target nucleic acid; the second CRISPR/Cas complex may comprise a second CRISPR/Cas enzyme and a second guide molecule that guides the second CRISPR/Cas complex to a second strand of the target nucleic acid.

[Continued on next page]

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, 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, 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).

Published:

- with international search report (Art. 21(3))
 - with sequence listing part of description (Rule 5.2(a))
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