

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
18 June 2020 (18.06.2020)



(10) International Publication Number
WO 2020/118444 A1

(51) International Patent Classification:

C12Q 1/6851 (2018.01) *C12M 1/38* (2006.01)
C12M 1/34 (2006.01) *C12Q 1/686* (2018.01)

(21) International Application Number:

PCT/CA2019/051805

(22) International Filing Date:

13 December 2019 (13.12.2019)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

62/779,132 13 December 2018 (13.12.2018) 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, 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).

(54) Title: ULTRAVIOLET QUANTITATIVE LABEL-FREE DETECTION OF DNA AMPLIFICATION

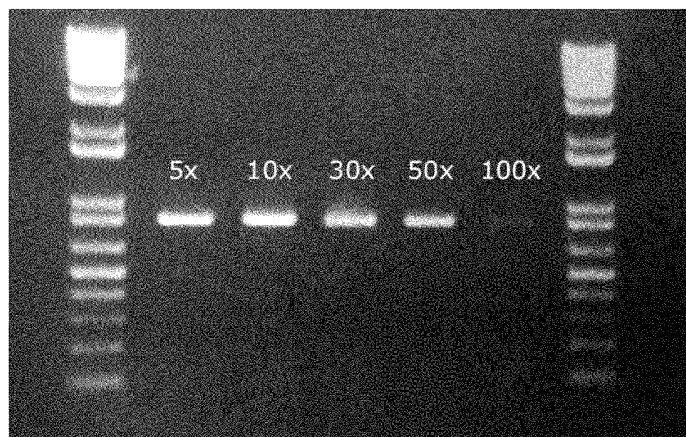


Fig. 4

(57) Abstract: The present disclosure relates to method and systems for amplifying nucleic acid molecule and quantify amplification thereof, with a polymerase chain reaction (PCR) or a loop-mediated isothermal amplification (LAMP), through bulk heating a biological enzymatic reaction mixture in solution containing nucleic acid templates, polymerase enzyme, and chemically modified nanoparticles. The method and system may comprise quantify amplification by irradiating the biological enzymatic reaction mixture during an annealing and/or elongation steps with an ultraviolet (UV) light source.

[Continued on next page]

WO 2020/118444 A1

Published:

- with international search report (Art. 21(3))
- in black and white; the international application as filed contained color or greyscale and is available for download from PATENTSCOPE