

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
10 August 2023 (10.08.2023)



(10) International Publication Number
WO 2023/148646 A1

(51) International Patent Classification:
C12N 15/115 (2010.01)

(21) International Application Number:
PCT/IB2023/050908

(22) International Filing Date:
02 February 2023 (02.02.2023)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/306,139 03 February 2022 (03.02.2022) US
63/311,092 17 February 2022 (17.02.2022) US

(71) Applicant: TSINGHUA UNIVERSITY [CN/CN]; 1
Qinghuayuan, Haidian District, Beijing, Beijing 100084
(CN).

(72) Inventors: ZHU, Ting; Tsinghua University, 1
Qinghuayuan, Haidian District, Beijing, Beijing 100084
(CN). CHEN, Ji; Tsinghua University, 1 Qinghuayuan,
Haidian District, Beijing, Beijing 100084 (CN).

(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, CV, CZ, DE, DJ, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE,
KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU,
LY, MA, MD, 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, CV,
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, ME, 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).

Declarations under Rule 4.17:
— of inventorship (Rule 4.17(iv))

(54) Title: MIRROR-IMAGE SELECTION OF L-NUCLEIC ACID APTAMERS

(57) Abstract: A method for screening L-nucleic acid aptamers for binding to a target molecule is disclosed. The method comprises: (a) contacting the plurality of L-nucleic acid aptamers with the target molecule under conditions that selectively capture target-bound L-nucleic acid aptamers from the plurality of L-nucleic acid aptamers; (b) amplifying L-nucleic acid aptamers of the target-bound L-nucleic acid aptamers to generate amplified, double-stranded L-nucleic acid oligonucleotides; and (c) isolating amplified double stranded L-nucleic acid oligonucleotides using an electrophoresis based method, thereby screening the plurality of L-nucleic acid aptamers.

WO 2023/148646 A1