

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

(19) World Intellectual Property
Organization

International Bureau

(43) International Publication Date
24 February 2022 (24.02.2022)



(10) International Publication Number
WO 2022/038291 A1

(51) International Patent Classification:

C12Q 1/6869 (2018.01) C12Q 1/6806 (2018.01)

(21) International Application Number:

PCT/EP2021/073203

(22) International Filing Date:

20 August 2021 (20.08.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

2013141.3 21 August 2020 (21.08.2020) GB

(71) Applicants: **UNIVERSITY COLLEGE CARDIFF CONSULTANTS LTD** [GB/GB]; 30-36 Newport Road, Cardiff CF24 0DE (GB). **BROKEN STRING BIOSCIENCES LIMITED** [GB/GB]; Salisbury House, Station Road, Cambridge CB1 2LA (GB).

(72) Inventors: **REED, Simon**; 8 Court Drive, Llansannor, Cowbridge CF71 7SD (GB). **DOBBS, Felix**; 17 Flamsteed Close, Cambridge CB1 3FD (GB). **VAN EIJK, Patrick**; 21 Allensbank Road, Cardiff CF14 3PN (GB).

(74) Agent: **COOLEY (UK) LLP**; 22 Bishopsgate, London Greater London EC2N 4BQ (GB).

(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, IT, 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).

Published:

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

(54) Title: A METHOD FOR THE ISOLATION OF DOUBLE-STRAND BREAKS

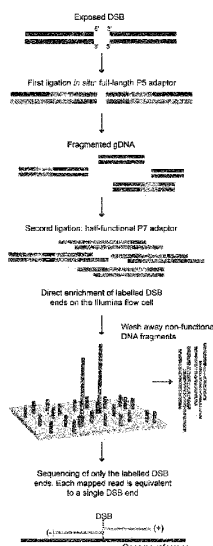


Figure 1

(57) Abstract: The invention relates to a method for determining the number and nature of DNA double-strand breaks (DSBs) in a nucleic acid sample, ideally gDNA; a kit of parts for performing the afore-said method including at least a plurality of oligonucleotides for ligating to said nucleic acid sample and providing at least a first hybridization site (RD1 SP or RD2 SP) to which at least one read sequencing primer can hybridise; and oligonucleotides for use in said kit and said method.

WO 2022/038291 A1