

(19) World Intellectual Property
Organization
International Bureau



WIPO | PCT



(10) International Publication Number

WO 2017/015513 A9

(43) International Publication Date
26 January 2017 (26.01.2017)

(51) International Patent Classification:

C12Q 1/68 (2006.01) C40B 30/04 (2006.01)
C40B 40/06 (2006.01) C12P 19/34 (2006.01)

(21) International Application Number:

PCT/US2016/043430

(22) International Filing Date:

21 July 2016 (21.07.2016)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

62/195,280 21 July 2015 (21.07.2015) US

(71) Applicant: GUARDANT HEALTH, INC. [US/US]; 505
Penobscot Drive, Redwood City, CA 94063 (US).

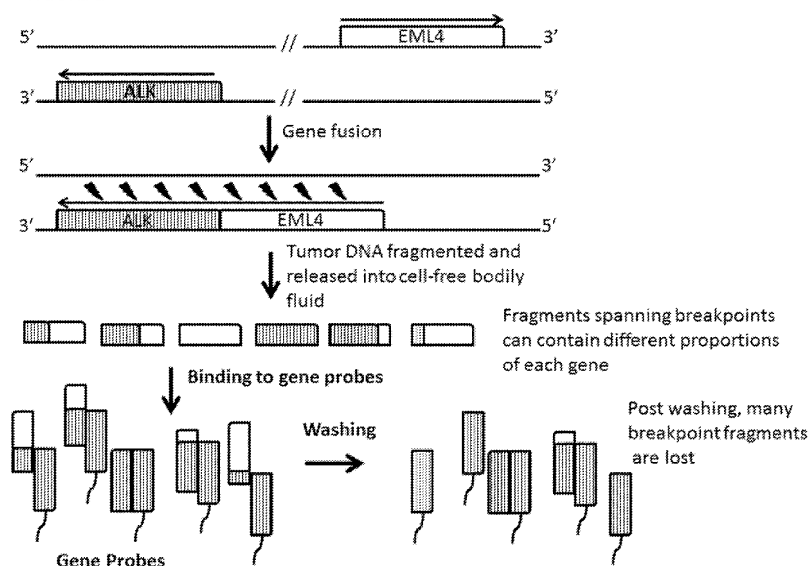
(72) Inventor: MORTIMER, Stefanie Ann, Ward; 2000 Wil-
low Springs Road, Morgan Hill, CA 95037 (US).

(74) Agent: STRONCEK, Jacqueline et al.; Wilson Sonsini
Goodrich & Rosati, 650 Page Mill Road, Palo Alto, CA
94304-1050 (US).

(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, DK, DM, DO, DZ,
EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR,
HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, 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.

(54) Title: LOCKED NUCLEIC ACIDS FOR CAPTURING FUSION GENES

FIGURE 1



(57) Abstract: Provided herein is a method for enriching a sample for polynucleotides comprising a breakpoint of a fusion gene, comprising: a) contacting a probe set comprising a plurality of polynucleotide probes, each probe configured to specifically hybridize to a fusion gene, wherein the set comprises one or more high affinity polynucleotide probes (e.g., a polynucleotide comprising one or more locked nucleic acid nucleotides), with a mixture of polynucleotides under hybridization conditions to produce probe-captured polynucleotides; and b) isolating the probe-captured polynucleotides from the mixture, to produce a sample enriched with polynucleotides comprising breakpoint fragments of the fusion gene.

[Continued on next page]

(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))*

(48) Date of publication of this corrected version:

12 April 2018 (12.04.2018)

(15) Information about Correction:

see Notice of 12 April 2018 (12.04.2018)