

(12) International Application Status Report

Received at International Bureau: 10 April 2000 (10.04.2000)

Information valid as of: (..)

Report generated on: 07 December 2019 (07.12.2019)

(10) Publication number: WO2000/050642	(43) Publication date: 31 August 2000 (31.08.2000)	(26) Publication language: English (EN)
(21) Application Number: PCT/US2000/004486	(22) Filing Date: 22 February 2000 (22.02.2000)	(25) Filing language: English (EN)
(31) Priority number(s): 60/121,223 (US) 60/127,825 (US) 60/128,643 (US) none (US) none (US) none (US)	(31) Priority date(s): 23 February 1999 (23.02.1999) 05 April 1999 (05.04.1999) 09 April 1999 (09.04.1999) 22 February 2000 (22.02.2000) 22 February 2000 (22.02.2000) 22 February 2000 (22.02.2000)	(31) Priority status: Priority document received (in compliance with PCT Rule 17.1) Priority document received (in compliance with PCT Rule 17.1) Priority document received (in compliance with PCT Rule 17.1) Priority claim considered not made Priority claim considered not made Priority claim considered not made

(51) International Patent Classification:

B01F 13/00 (2006.01); **B01L 3/00** (2006.01); **C07H 21/02** (2006.01); **C07H 21/04** (2006.01); G01N 27/447 (2006.01); **G01N 35/00** (2006.01)

(71) Applicant(s):

CALIPER TECHNOLOGIES CORP. [US/US]; 605 Fairchild Drive Mountain View, CA 94043 (US) *(for all designated states except US)*

PARCE, J., Wallace [US/US]; 754 Los Roble Avenue Palo Alto, CA 94306 (US) *(for US only)*

NIKIFOROV, Theo, T. [US/US]; 37 South 16th Street San Jose, CA 95112 (US) *(for US only)*

BURD MEHTA, Tammy [US/US]; 1181 Fairview Avenue San Jose, CA 95125 (US) *(for US only)*

KOPF-SILL, Anne [US/US]; 30 Minoca Road Portola Valley, CA 94028 (US) *(for US only)*

CHOW, Andrea, W. [US/US]; 670 Cuesta Drive Los Altos, CA 94024 (US) *(for US only)*

KNAPP, Michael, R. [US/US]; 738 Glenmere Way Redwood City, CA 94062 (US) *(for US only)*

(72) Inventor(s):

PARCE, J., Wallace; 754 Los Roble Avenue Palo Alto, CA 94306 (US)

NIKIFOROV, Theo, T.; 37 South 16th Street San Jose, CA 95112 (US)

BURD MEHTA, Tammy; 1181 Fairview Avenue San Jose, CA 95125 (US)

KOPF-SILL, Anne; 30 Minoca Road Portola Valley, CA 94028 (US)

CHOW, Andrea, W.; 670 Cuesta Drive Los Altos, CA 94024 (US)

KNAPP, Michael, R.; 738 Glenmere Way Redwood City, CA 94062 (US)

(74) Agent(s):

QUINE, Jonathan, Alan; The Law Offices of Jonathan Alan Quine P.O. Box 458 Alameda, CA 94501 (US)

(54) Title (EN): SEQUENCING BY INCORPORATION

(54) Title (FR): SEQUENÇAGE PAR INCORPORATION

(57) Abstract:

(EN): Nucleotides and nucleotide analogs are used in various sequencing by incorporation/sequencing by synthesis methods. Nucleotide analogs comprising 3'-blocking groups are used to provide reversible chain-termination for sequencing by synthesis. Typical blocking groups include phosphate groups and carbamate groups. Fluorescent nucleotides are used to perform sequencing by synthesis with detection by incorporation of the fluorescently labeled nucleotide, optionally followed by photobleaching and

intercalating dyes are used to detect addition of a non-labeled nucleotide in sequencing by synthesis with detection by intercalation. Microfluidic devices, including particle arrays, are used in the sequencing methods.

(FR): L'invention concerne des nucléotides et des analogues de nucléotides utilisés dans différents séquençages par incorporation/séquençage au moyen de techniques de synthèse. Des analogues de nucléotide comprenant des groupes bloquants 3' sont utilisés pour produire une terminaison de chaîne réversible pour séquençage par synthèse. Des groupes bloquants typiques comprennent des groupes phosphate et des groupes carbamate. Des nucléotides fluorescents sont utilisés pour effectuer un séquençage par synthèse avec détection par incorporation du nucléotide marqué par fluorescence, éventuellement suivie d'un photoblanchiment d'une insertion de colorants utilisés pour détecter l'adjonction d'un nucléotide non marqué dans un séquençage par synthèse avec détection par insertion. On utilise des dispositifs microfluidiques, comprenant des réseaux de particules, dans ces techniques de séquençage.

International search report:

Received at International Bureau: 09 June 2000 (09.06.2000) [US]

International Report on Patentability (IPRP) Chapter II of the PCT:

Chapter II demand received: 01 September 2000 (01.09.2000)

(81) Designated States:

AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW

European Patent Office (EPO) : AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

African Intellectual Property Organization (OAPI) : BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

African Regional Intellectual Property Organization (ARIPO) : GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW

Eurasian Patent Organization (EAPO) : AM, AZ, BY, KG, KZ, MD, RU, TJ, TM