



- (51) **International Patent Classification:**
C12Q 1/6806 (2018.01) *C12Q 1/6869* (2018.01)
- (21) **International Application Number:**
PCT/US2023/063736
- (22) **International Filing Date:**
03 March 2023 (03.03.2023)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
63/316,790 04 March 2022 (04.03.2022) US
17/725,042 20 April 2022 (20.04.2022) US
- (71) **Applicant: ELEMENT BIOSCIENCES, INC.** [US/US];
9880 Campus Point Drive, Suite 210, San Diego, California
92121 (US).
- (72) **Inventors; and**
- (71) **Applicants: LIGHT, William** [US/US]; 14540 Glenville
Street, Poway, California 92064 (US). **KELLEY, Ryan**
[US/US]; 11134 Red Cedar Dr., San Diego, California
92131 (US). **ZHAO, Junhua** [US/US]; 5992 E Village
Center Loop Road, San Diego, California 92130 (US).

- (74) **Agent: ERLACHER, Heidi** et al.; Cooley LLP, 1299
Pennsylvania Ave., Suite 700, Washington, District of Co-
lumbia 20004 (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, 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, SC, 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).

(54) **Title:** SINGLE-STRANDED SPLINT STRANDS AND METHODS OF USE

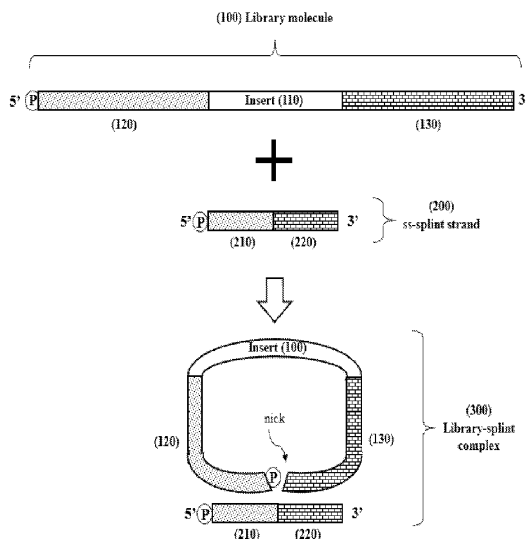


FIG. 1

- (57) **Abstract:** The present disclosure provides compositions comprising nucleic acid single-stranded splint strands, including kits, and methods that employ the single-stranded splint strands. The single-stranded splint strands can hybridize to portions of linear library molecules to form circularized library-splint complexes having a nick, where the nick can be ligated to form covalently closed circular molecules which can be subjected to downstream amplification and sequencing workflows.

Published:

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*
- *with sequence listing part of description (Rule 5.2(a))*