



(51) International Patent Classification:

C12N 15/11 (2006.01) C12N 9/12 (2006.01)
C12N 15/113 (2010.01)

(21) International Application Number:

PCT/US2024/055256

(22) International Filing Date:

08 November 2024 (08.11.2024)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/598,064	10 November 2023 (10.11.2023)	US
63/660,308	14 June 2024 (14.06.2024)	US
63/694,651	13 September 2024 (13.09.2024)	US
63/716,220	04 November 2024 (04.11.2024)	US

(71) Applicant: **INTELLIA THERAPEUTICS, INC.**
[US/US]; 40 Erie Street, Cambridge, Massachusetts 02139 (US).

(72) Inventors: **MULEPATI, Sabin**; 40 Erie Street, Cambridge, Massachusetts 02139 (US). **DOMBROWSKI, Christian**; 40 Erie Street, Cambridge, Massachusetts 02139 (US).

BONANNO, Jasmine Josephine; 40 Erie Street, Cambridge, Massachusetts 02139 (US). **HANAMSHET, Kritika**; 40 Erie Street, Cambridge, Massachusetts 02139 (US). **RAMACHANDRAN, Anita**; 40 Erie Street, Cambridge, Massachusetts 02139 (US). **YANG, Darwin**; 40 Erie Street, Cambridge, Massachusetts 02139 (US). **CHOI, Sung Hce**; 40 Erie Street, Cambridge, Massachusetts 02139 (US). **WANG, Pei**; 40 Erie Street, Cambridge, Massachusetts 02139 (US). **CHEN, Weijun**; 40 Erie Street, Cambridge, Massachusetts 02139 (US). **PARMAR, Rubina Giare**; 40 Erie Street, Cambridge, Massachusetts 02139 (US).

(74) Agent: **DOHERTY, Elizabeth A.** et al.; McNeill PLLC, 245 First Street, 18th Floor, Cambridge, Massachusetts 02142 (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, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO,

(54) Title: COMPOSITIONS, METHODS, AND SYSTEMS FOR GENOMIC EDITING

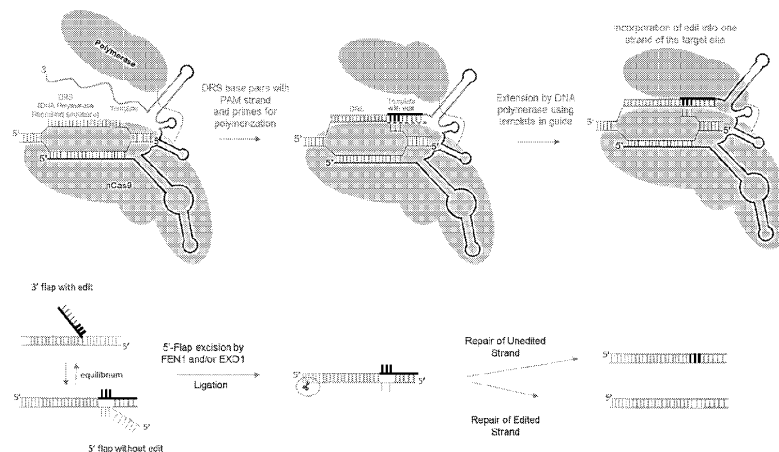


FIG. 1

(57) Abstract: The present disclosure relates to compositions, methods, and systems for genomic editing. In certain aspects, the compositions, methods, and systems provided herein can incorporate a SpyCas9 nickase, a DNA-dependent DNA polymerase, and/or a template guide RNA for template-based genome editing applications.

[Continued on next page]

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).

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))*

(88) Date of publication of the international search report:
10 July 2025 (10.07.2025)