



(51) International Patent Classification:

A61K 31/7088 (2006.01) C12N 1/21 (2006.01)
A61K 35/12 (2015.01) C12N 15/00 (2006.01)
A61K 35/76 (2015.01) C12N 15/09 (2006.01)
A61K 48/00 (2006.01) C12N 15/10 (2006.01)
A61P 25/00 (2006.01) C12N 15/11 (2006.01)
A61P 3/00 (2006.01) C12N 15/113 (2010.01)
A61P 31/00 (2006.01) C12N 15/63 (2006.01)
A61P 35/00 (2006.01) C12N 15/90 (2006.01)
A61P 43/00 (2006.01) C12N 5/10 (2006.01)
C12N 1/15 (2006.01) C12N 9/12 (2006.01)
C12N 1/19 (2006.01) C12N 9/22 (2006.01)

(21) International Application Number:

PCT/US2024/010561

(22) International Filing Date:

05 January 2024 (05.01.2024)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/478,654 05 January 2023 (05.01.2023) US
63/603,479 28 November 2023 (28.11.2023) US

(71) Applicant: **PRIME MEDICINE, INC.** [US/US]; 21 Erie Street, Cambridge, Massachusetts 02139 (US).

(72) Inventors: **PODRACKY, Christopher J.**; 21 Erie Street, Cambridge, Massachusetts 02139 (US). **POMEROY, Emily**; 21 Erie Street, Cambridge, Massachusetts 02139 (US). **BLOCH, Noah B.**; 21 Erie Street, Cambridge, Massachu-

setts 02139 (US). **ANZALONE, Andrew V.**; 21 Erie Street, Cambridge, Massachusetts 02139 (US).

(74) Agent: **JONES, Brendan T.**; Foley Hoag LLP, 155 Seaport Boulevard, Boston, Massachusetts 02210-2600 (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, 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).

Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

(54) Title: GENOME EDITING COMPOSITIONS AND METHODS OF USE

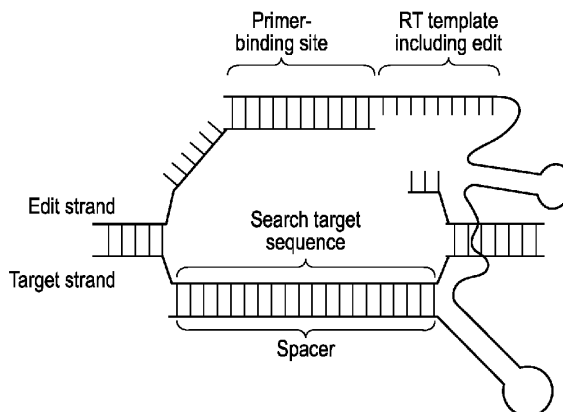


FIG. 1

(57) Abstract: Provided herein are compositions comprising prime editing systems, and methods of using prime editing systems to edit TRAC gene. Provided herein are compositions comprising edited cells, and methods to generate the edited cells. Also provided are methods of using the edited cells.

[Continued on next page]

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))*

(88) Date of publication of the international search report:

19 September 2024 (19.09.2024)