



(51) International Patent Classification:

C12N 15/113 (2010.01) C12N 9/22 (2006.01)

(21) International Application Number:

PCT/US2021/061673

(22) International Filing Date:

02 December 2021 (02.12.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/121,196	03 December 2020 (03.12.2020)	US
63/162,346	17 March 2021 (17.03.2021)	US
63/208,855	09 June 2021 (09.06.2021)	US

(71) Applicant: **SCRIBE THERAPEUTICS INC.** [US/US];
1150 Marina Village Parkway, Alameda, California 94501 (US).

(72) Inventor; and

(71) Applicant: **VIJAYAKUMAR, Gayathri** [IN/US]; c/o
Scribe Therapeutics Inc., 1150 Marina Village Parkway,
Alameda, California 94501 (US).(72) Inventors: **HIGGINS, Sean**; c/o Scribe Therapeutics Inc.,
1150 Marina Village Parkway, Alameda, California 94501
(US). **COLIN, Isabel**; c/o Scribe Therapeutics Inc., 1150

Marina Village Parkway, Alameda, California 94501 (US).
DENNY, Sarah; c/o Scribe Therapeutics Inc., 1150 Marina Village Parkway, Alameda, California 94501 (US).
STAAHL, Brett T.; c/o Scribe Therapeutics Inc., 1150 Marina Village Parkway, Alameda, California 94501 (US).
OAKES, Benjamin; c/o Scribe Therapeutics Inc., 1150 Marina Village Parkway, Alameda, California 94501 (US).
SIDORE, Angus; c/o Scribe Therapeutics Inc., 1150 Marina Village Parkway, Alameda, California 94501 (US).
MAKHIIJA, Suraj; c/o Scribe Therapeutics Inc., 1150 Marina Village Parkway, Alameda, California 94501 (US).

(74) Agent: **ROY, Madhuri** et al.; Cooley LLP, 1299 Pennsylvania Ave., Suite 700, Washington, District of Columbia 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, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, IT, JO, JP, KE, KG, KH, KN, KP, KR, KW, 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,

(54) Title: ENGINEERED CLASS 2 TYPE V CRISPR SYSTEMS

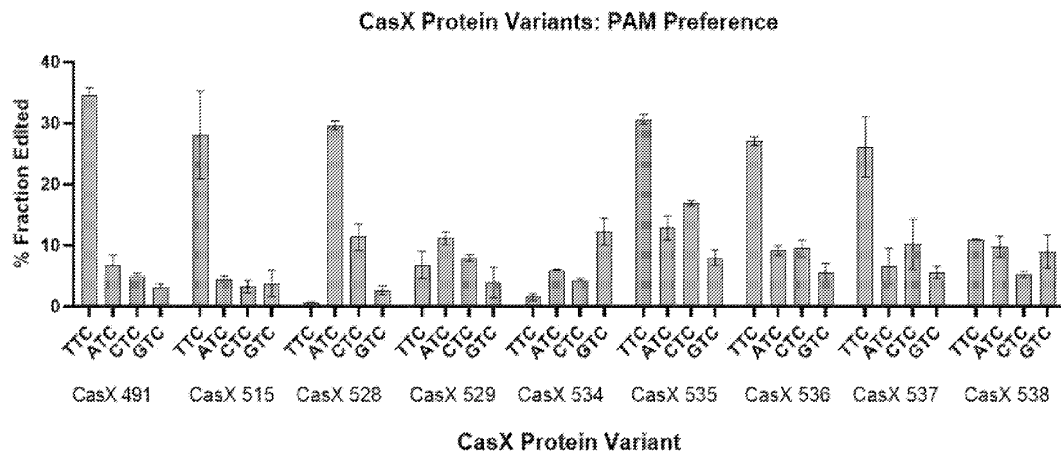


FIG. 38

(57) Abstract: Provided herein are engineered Class 2, Type V nucleases and guide RNAs useful for the editing of target nucleic acids. Also provided are methods of making and using such variants to modify nucleic acids.

[Continued on next page]

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, 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))*
- *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))*