

(51) International Patent Classification:
C12N 9/22 (2006.01)(21) International Application Number:
PCT/US2023/067987(22) International Filing Date:
06 June 2023 (06.06.2023)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/349,981 07 June 2022 (07.06.2022) US
63/492,923 29 March 2023 (29.03.2023) US
63/505,823 02 June 2023 (02.06.2023) US(71) Applicant: SCRIBE THERAPEUTICS INC. [US/US];
1150 Marina Village Parkway, Alameda, California 94501 (US).

(72) Inventors: FERNANDES, Jason; c/o Scribe Therapeutics Inc., 1150 Marina Village Parkway, Alameda, California 94501 (US). HIGGINS, Sean; 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). WHITE, Ross; c/o Scribe Therapeutics Inc., 1150

Marina Village Parkway, Alameda, California 94501 (US). CHARLES, Emeric Jean Marius; c/o Scribe Therapeutics Inc., 1150 Marina Village Parkway, Alameda, California 94501 (US). WRIGHT, Addison; c/o Scribe Therapeutics Inc., 1150 Marina Village Parkway, Alameda, California 94501 (US). DEMAREE, Benjamin; c/o Scribe Therapeutics Inc., 1150 Marina Village Parkway, Alameda, California 94501 (US). MOHR, Manuel; c/o Scribe Therapeutics Inc., 1150 Marina Village Parkway, Alameda, California 94501 (US). ZHOU, Wenyuan; 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, CA 94501 (US).

(74) Agent: ROY, Madhuri et al.; Cooley LLP, 1299 Pennsylvania Ave., NW, 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, 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,

(54) Title: COMPOSITIONS AND METHODS FOR THE TARGETING OF PCSK9

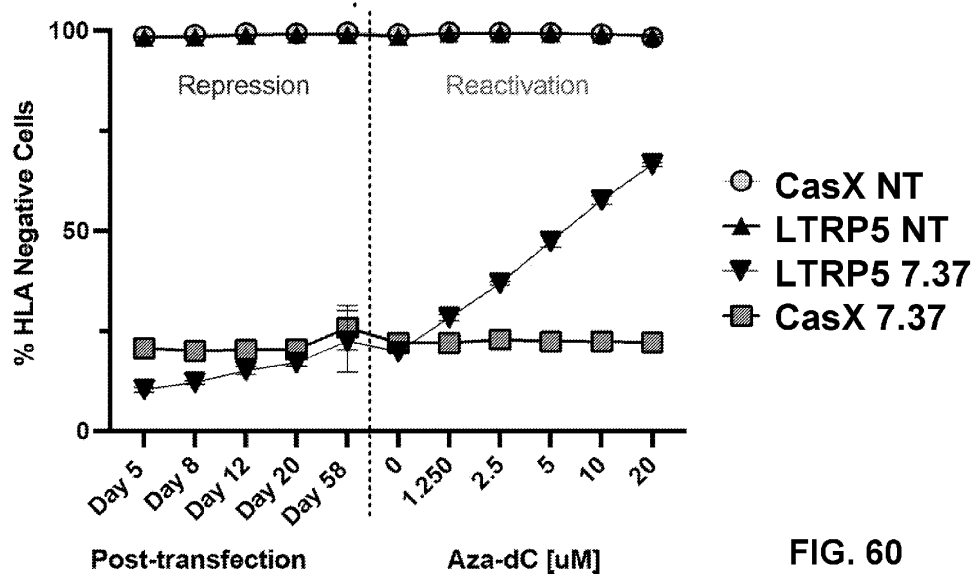


FIG. 60

(57) Abstract: Provided herein are gene repressor systems comprising fusion proteins, such as fusion proteins comprising a DNA binding domain such as a TALE, zinc finger or catalytically-dead CRISPR protein and guide nucleic acid (gRNA), which are useful in the repression of a *proprotein convertase subtilisin/kexin Type 9 (PCSK9)* gene. Also provided are methods of using such systems to repress transcription of *PCSK9*.

[Continued on next page]

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).

Published:

- with international search report (Art. 21(3))
- with sequence listing part of description (Rule 5.2(a))