

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
30 January 2025 (30.01.2025)



(10) International Publication Number
WO 2025/024704 A1

(51) International Patent Classification:

A61K 48/00 (2006.01) C12N 15/85 (2006.01)
C12Q 1/6897 (2018.01) G01N 33/50 (2006.01)
C12N 15/63 (2006.01)

(21) International Application Number:

PCT/US2024/039618

(22) International Filing Date:

25 July 2024 (25.07.2024)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/515,514 25 July 2023 (25.07.2023) US
63/644,296 08 May 2024 (08.05.2024) US

(71) Applicant: **STRAND THERAPEUTICS INC.** [US/US];
20 Overland Street, Suite A, Boston, Massachusetts 02215
(US).

(72) Inventors: **KITADA, Tasuku**; c/o Strand Therapeutics
Inc., 20 Overland Street, Suite A, Boston, Massachusetts
02215 (US). **KHURANA, Jaspreet**; c/o Strand Therapeu-
tics Inc., 20 Overland Street, Suite A, Boston, Massachu-
setts 02215 (US). **TSENG, Wen Allen**; c/o Strand Ther-
apeutics Inc., 20 Overland Street, Suite A, Boston, Mass-
achusetts 02215 (US). **NAMBIAR, Prashant**; c/o Strand
Therapeutics Inc., 20 Overland Street, Suite A, Boston,
Massachusetts 02215 (US). **SHI, Kevin**; c/o Strand Ther-
apeutics Inc., 20 Overland Street, Suite A, Boston, Mass-
achusetts 02215 (US). **LETENDRE, Justin**; c/o Strand
Therapeutics Inc., 20 Overland Street, Suite A, Boston,
Massachusetts 02215 (US).

(74) Agent: **CHOO, Daniel K.H.** et al.; Sterne, Kessler, Gold-
stein & Fox P.L.L.C., 1101 K Street NW, 10th Floor, Wash-
ington, District of Columbia 20005 (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:

— of inventorship (Rule 4.17(iv))

Published:

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

(54) Title: POLYNUCLEOTIDES COMPRISING A MICRO RNA DETARGETING SENSOR AND USES THEREOF

(57) Abstract: The present disclosure relates to polynucleotides comprising (a) a first region encoding a payload and (b) a second region comprising an immune cell detargeting sensor (e.g., a spleen detargeting sensor). Upon recognition of the marker by the sensor, the expression of the encoded payload is reduced or inhibited. Also provided herein are replicons, nanoparticles, synthetic circuits, pharmaceutical compositions comprising such polynucleotides. Methods of using the polynucleotides, replicons, synthetic circuits, nanoparticles, and pharmaceutical compositions are also provided.

WO 2025/024704 A1