



(51) International Patent Classification:
Not classified

(21) International Application Number:
PCT/SG2023/050034

(22) International Filing Date:
18 January 2023 (18.01.2023)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2200546.6 18 January 2022 (18.01.2022) GB

(71) Applicant: NATIONAL UNIVERSITY OF SINGAPORE [SG/SG]; 21 Lower Kent Ridge Road, Singapore 119077 (SG).

(72) Inventors: LOH, Pei She; c/o National University of Singapore, Yong Loo Lin School of Medicine / Dept. of Microbiology & Immunology, 21 Lower Kent Ridge Road, Singapore 119077 (SG). PATZEL, Volker; c/o National University of Singapore, Yong Loo Lin School of Med-

icine / Dept. of Microbiology & Immunology, 21 Lower Kent Ridge Road, Singapore 119077 (SG).

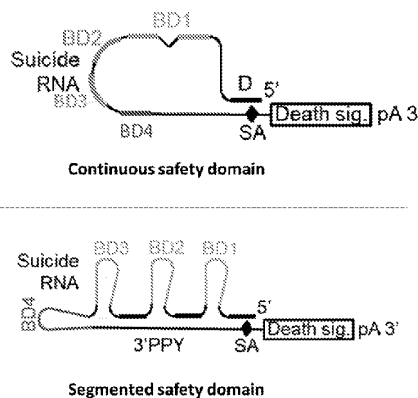
(74) Agent: AMICA LAW LLC; 77 Robinson Road, #22-01 Robinson 77, Singapore 068896 (SG).

(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, 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.

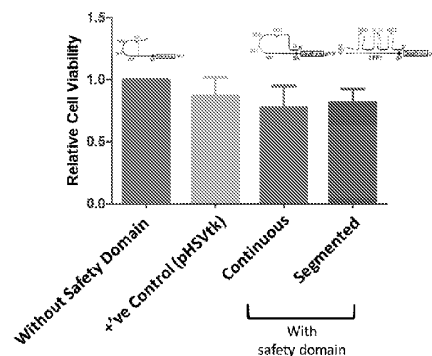
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU,

(54) Title: TRANS-SPLICING RNA (tsRNA)

Figure 4.



Safety domains do not impair the on-target activity of novel multi-targeting trans-splicing constructs



(57) Abstract: Trans-splicing RNA (tsRNA) The invention concerns a trans-splicing RNA (tsRNA) molecule comprising at least one or multiple unstructured target binding domains complementary to at least one or multiple precursor messenger RNA (pre-mRNA) targets and adapted to prevent off-target trans-splicing by the inclusion of a safety domain; a cell or vector or therapeutic or composition or pharmaceutical composition comprising said tsRNA; and a method for killing cells or treating a disease or for imaging or for a cosmetic application using said tsRNA. The invention has use in the medical, cosmetic, and veterinary field.

[Continued on next page]

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:

- *without international search report and to be republished
upon receipt of that report (Rule 48.2(g))*
- *with sequence listing part of description (Rule 5.2(a))*