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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
12 October 2023 (12.10.2023)

WIPO | PCT

(10) International Publication Number
WO 2023/194537 A1

(51) International Patent Classification:
C12N 15/10 (2006.01)

(21) International Application Number:
PCT/EP2023/059142

(22) International Filing Date:
06 April 2023 (06.04.2023)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/328,912 08 April 2022 (08.04.2022) US
63/432,466 14 December 2022 (14.12.2022) US

(71) Applicant: **GLAXOSMITHKLINE INTELLECTUAL PROPERTY DEVELOPMENT LIMITED** [GB/GB]; 980 Great West Road, Brentford Middlesex TW8 9GS (GB).

(72) Inventors: **CRAMERI, Andreas**; c/o GSK, Gunnels Wood Road, Stevenage Hertfordshire SG1 2NY (GB). **FUERST, Douglas**; GSK, 1250 South Collegeville Road, Collegeville, Pennsylvania 19426 (US). **HOSFORD, Joseph**; GSK, Gunnels Wood Road, Stevenage Hertfordshire SG1 2NY (GB). **TEW, David**; GSK, Gunnels Wood Road, Stevenage Hertfordshire SG1 2NY (GB).

(74) Agent: **SUEN, Victoria**; GSK, 980 Great West Road, Brentford Middlesex TW8 9GS (GB).

(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).

Published:
— *with international search report (Art. 21(3))*
— *with sequence listing part of description (Rule 5.2(a))*
— *in black and white; the international application as filed contained color or greyscale and is available for download from PATENTSCOPE*

(54) Title: NOVEL PROCESSES FOR THE PRODUCTION OF POLYNUCLEOTIDES INCLUDING OLIGONUCLEOTIDES

(57) Abstract: The invention relates to novel processes using enzymes for the production of polynucleotides or oligonucleotides, wherein said processes are suitable for use in the production of modified polynucleotides or oligonucleotides, such as those for use in therapy.

WO 2023/194537 A1