

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
27 May 2022 (27.05.2022)



(10) International Publication Number
WO 2022/109267 A2

(51) International Patent Classification:

G16B 20/20 (2019.01) C12Q 1/68 (2018.01)

(21) International Application Number:

PCT/US2021/060085

(22) International Filing Date:

19 November 2021 (19.11.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/116,085 19 November 2020 (19.11.2020) US

(71) Applicant: **REGENERON PHARMACEUTICALS, INC.** [US/US]; 777 Old Saw Mill River Road, Tarrytown, New York 10591-6707 (US).

(72) Inventors: **ABECASIS, Goncalo**; 777 Old Saw Mill River Road, Tarrytown, New York 10591-6707 (US). **BARBER, Mathew**; 777 Old Saw Mill River Road, Tarrytown, New York 10591-6707 (US). **SALERNO, William**; 777 Old Saw Mill River Road, Tarrytown, New York 10591-6707 (US).

(74) Agent: **LEGAARD, Paul K.**; Stradley Ronon Stevens & Young, LLP, 30 Valley Stream Parkway, Malvern, Pennsylvania 19355-1481 (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, 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).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

Published:

- without international search report and to be republished upon receipt of that report (Rule 48.2(g))

WO 2022/109267 A2

(54) Title: GENOTYPING BY SEQUENCING

(57) Abstract: The present disclosure provides methods for manufacturing nucleic acid probes for genotyping by sequencing, methods for genotyping a DNA sample by sequencing using a set of nucleic acid probes, and systems for carrying out such methods.