

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

(19) World Intellectual Property
Organization

International Bureau

(43) International Publication Date
13 October 2022 (13.10.2022)



(10) International Publication Number
WO 2022/214599 A1

(51) International Patent Classification:
A61K 39/29 (2006.01)

(21) International Application Number:
PCT/EP2022/059281

(22) International Filing Date:
07 April 2022 (07.04.2022)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
202110374234.2 07 April 2021 (07.04.2021) CN

(71) Applicants: **THERAVECTYS** [FR/FR]; Bâtiment Pasteur Biotop, 28 rue du Docteur Roux, 75724 PARIS CEDEX 15 (FR). **SHANGHAI JINWEI BIOTECHNOLOGY CO., LTD.** [CN/CN]; Room 1304-1305, 781 Cailun Road, PUDONG, Shanghai 201203 (CN). **INSTITUT PASTEUR** [FR/FR]; 25-28 rue du Docteur Roux, 75724 PARIS CEDEX 15 (FR).

(72) Inventors: **CHARNEAU, Pierre, Alain**; c/o INSTITUT PASTEUR, 25-28 rue du Docteur Roux, 75724 PARIS CEDEX 15 (FR). **BOURGINE, Maryline**; c/o INSTITUT PASTEUR, 25-28 rue du Docteur Roux, 75724 PARIS CEDEX 15 (FR). **QIU, Chao**; c/o SHANGHAI JINWEI BIOTECHNOLOGY CO., LTD., Room 1304-1305, 781 Cailun Road, PUDONG, Shanghai 201203 (CN). **TIAN, Ye**; c/o THERAVECTYS, Bâtiment Pasteur Biotop, 28 rue du Docteur Roux, 75724 PARIS CEDEX 15 (FR). **VESIN, Benjamin**; c/o THERAVECTYS, Bâtiment Pasteur Biotop, 28 rue du Docteur Roux, 75724 PARIS CEDEX 15 (FR).

(74) Agent: **CABINET NONY**; 11 rue Saint-Georges, 75009 PARIS (FR).

(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, JM, 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).

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))
- 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: LENTIVIRAL VECTOR, LENTIVIRAL PARTICLE FOR TREATING HEPATITIS B AND ITS PREPARATION METHOD AND APPLICATION THEREOF

(57) Abstract: The invention discloses a lentiviral vector and lentiviral vector particles for treating hepatitis B infection. The lentiviral vector and particles of the invention contain a nucleotide sequence coding an hepatitis B virus antigen. The large S antigen of hepatitis B virus was in particular selected as candidate and can be applied in pharmaceutical compositions or vaccines for treating and/or preventing hepatitis B virus infection or treating and/or preventing diseases caused by hepatitis B virus infection, which has excellent therapeutic and preventive effects in subjects in need thereof.

WO 2022/214599 A1