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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
19 May 2022 (19.05.2022)

WIPO | PCT

(10) International Publication Number
WO 2022/103766 A3

(51) International Patent Classification:
A61K 35/761 (2015.01) *C12N 15/86* (2006.01)
A61K 48/00 (2006.01) *C12N 15/861* (2006.01)

(21) International Application Number:
PCT/US2021/058650

(22) International Filing Date:
09 November 2021 (09.11.2021)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/111,739 10 November 2020 (10.11.2020) US

(71) Applicant: **AVIRMAX, INC.** [US/US]; 22421 Hesperian Boulevard, Hayward, CA 94541 (US).

(72) Inventors: **LIU, Shengjiang**; 22421 Hesperian Boulevard, Hayward, CA 94541 (US). **CHEN, Haifeng**; 22421 Hesperian Boulevard, Hayward, CA 94541 (US). **GONG, Xiaoming**; 22421 Hesperian Boulevard, Hayward, CA 94541 (US).

(74) Agent: **LIN, Chun, Shi**; Wilson Sonsini Goodrich & Rosati, 650 Page Mill Road, Palo Alto, CA 94304 (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).

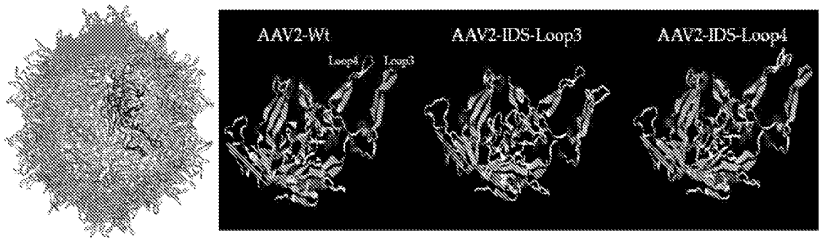
Declarations under Rule 4.17:
— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

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))*

(88) Date of publication of the international search report:
21 July 2022 (21.07.2022)

(54) Title: ENGINEERED VIRAL CAPSIDS AND METHODS OF USE

Fig. 1



(57) Abstract: Provided herein are compositions and methods comprising modified adeno-associated virus (AAV) capsids. Also provided are methods of utilizing the provided compositions and methods as ocular therapeutics.

WO 2022/103766 A3