

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
12 May 2022 (12.05.2022)



(10) International Publication Number
WO 2022/098841 A1

- (51) **International Patent Classification:**
C12N 15/113 (2010.01) *A61K 31/713* (2006.01)
- (21) **International Application Number:**
PCT/US2021/058012
- (22) **International Filing Date:**
04 November 2021 (04.11.2021)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
63/110,309 05 November 2020 (05.11.2020) US
- (71) **Applicant: AMGEN INC.** [US/US]; One Amgen Center Drive, Thousand Oaks, California 91320-1799 (US).
- (72) **Inventors: SOHN, Winnie;** c/o Amgen Inc., One Amgen Center Drive, Law Dept - Patent Operations, MS 28-5-A, Thousand Oaks, California 91320-1799 (US). **JONES, Zachary;** c/o Amgen Inc., One Amgen Center Drive, Law

Dept - Patent Operations, MS 28-5-A, Thousand Oaks, California 91320-1799 (US). **KASSAHUN, Helina;** c/o Amgen Inc., One Amgen Center Drive, Law Dept - Patent Operations, MS 28-5-A, Thousand Oaks, California 91320-1799 (US).

(74) **Agent: PURCELL, Angela L.;** One Amgen Center Drive, Law Dept - Patent Operations, MS 28-5-A, Thousand Oaks, California 91320-1799 (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,

(54) **Title:** METHODS FOR TREATING ATHEROSCLEROTIC CARDIOVASCULAR DISEASE WITH LPA-TARGETED RNAi CONSTRUCTS

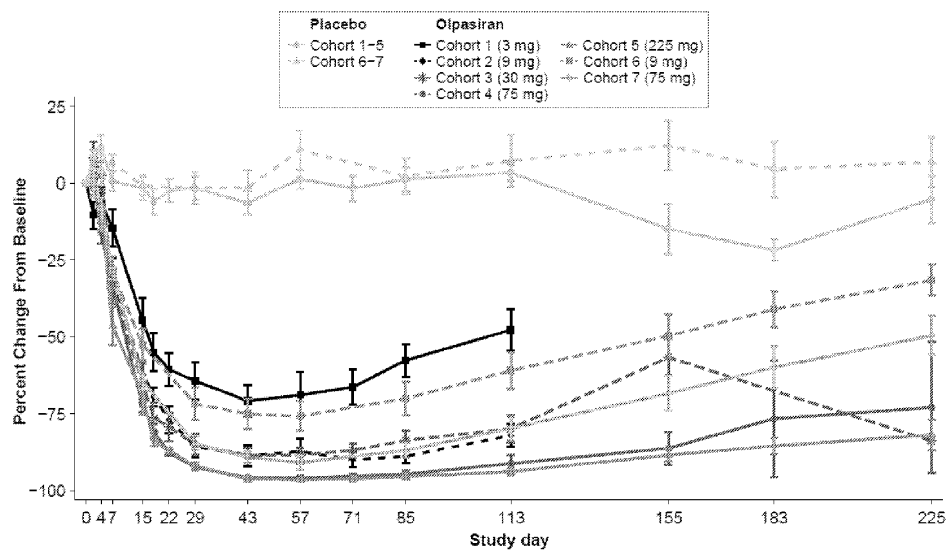


FIG. 2

(57) **Abstract:** The present invention relates to methods for treating or preventing atherosclerotic cardiovascular disease and other conditions associated with elevated levels of lipoprotein (a) (Lp(a)) using RNAi constructs targeting the *LPA* gene, which encodes apolipoprotein(a), a component of Lp(a) particles. In particular, the present invention relates to methods for reducing serum Lp(a) levels and reducing the risk of cardiovascular events in patients with elevated levels of Lp(a) comprising administering an *LPA*-targeted RNAi construct according to specific dosage regimens. Pharmaceutical compositions comprising the *LPA*-targeted RNAi constructs for use in the methods are also disclosed.

[Continued on next page]

WO 2022/098841 A1

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:

- *with international search report (Art. 21(3))*
- *with sequence listing part of description (Rule 5.2(a))*