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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
22 October 2009 (22.10.2009)

PCT

(10) International Publication Number
WO 2009/127060 A1

(51) International Patent Classification:
C12N 15/88 (2006.01) *A61P 35/00* (2006.01)
A61K 31/7088 (2006.01) *C07H 21/00* (2006.01)
A61K 31/713 (2006.01) *C12N 15/11* (2006.01)
A61K 48/00 (2006.01) *C12N 15/87* (2006.01)
A61P 1/16 (2006.01) *C07K 14/775* (2006.01)
A61P 31/12 (2006.01)

(21) International Application Number:
PCT/CA2009/000496

(22) International Filing Date:
15 April 2009 (15.04.2009)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/045,228 15 April 2008 (15.04.2008) US

(71) Applicant *(for all designated States except US)*: **PROTIVA BIOTHERAPEUTICS, INC.** [CA/CA]; 100-8900 Glenlyon Parkway, Burnaby, british Columbia V5J 5J8 (CA).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: **MACLACHLAN, Ian** [CA/CA]; 8040 Aves Terrace, Mission, British Columbia V4S 1E5 (CA). **YAWORSKI, Edward** [CA/CA]; 23106-123B Avenue, Maple Ridge, British Columbia V2X 9Z7 (CA). **LAM, Kieu** [CA/CA]; 18871 71 Avenue, Surrey, British Columbia V4N 5M7 (CA).

(74) Agent: **KINGWELL, Brian G.**; Fetherstonhaugh, Box 11560 Vancouver Centre, 2200-650 West Georgia Street, Vancouver, British Columbia V6B 4N8 (CA).

(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, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,

[Continued on next page]

(54) Title: NOVEL LIPID FORMULATIONS FOR NUCLEIC ACID DELIVERY

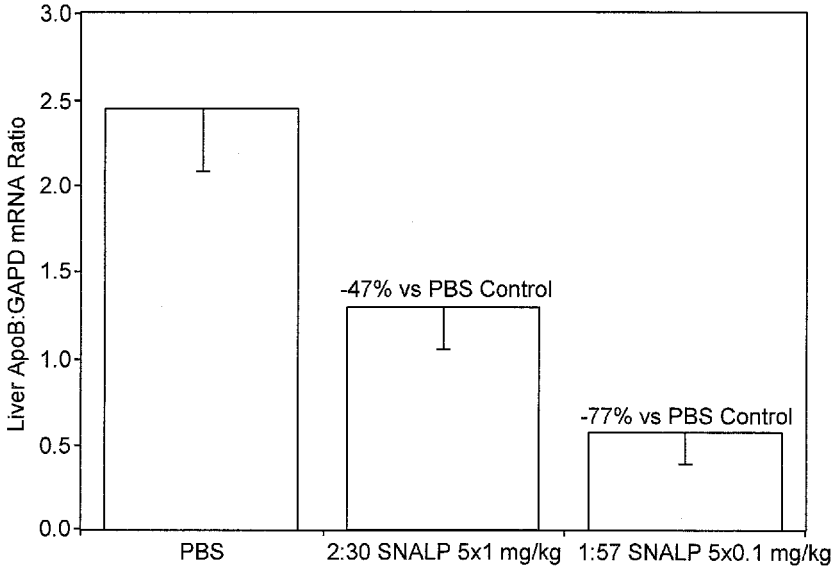


FIG. 3

(57) Abstract: The present invention provides novel, stable lipid particles comprising one or more active agents or therapeutic agents, methods of making the lipid particles, and methods of delivering and/or administering the lipid particles. More particularly, the present invention provides stable nucleic acid-lipid particles (SNALP) comprising a nucleic acid (such as one or more interfering RNA), methods of making the SNALP, and methods of delivering and/or administering the SNALP.

WO 2009/127060 A1

MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report (Art. 21(3))*