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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
12 August 2010 (12.08.2010)

PCT

(10) International Publication Number
WO 2010/091078 A3

(51) International Patent Classification:
A61K 9/127 (2006.01)

(21) International Application Number:
PCT/US2010/023043

(22) International Filing Date:
3 February 2010 (03.02.2010)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/149,521 3 February 2009 (03.02.2009) US

(71) Applicant *(for all designated States except US)*: **AQUAZ A/S** [DK/DK]; Nordborgvej 81, E14, DK-6430 Nordborg (DK).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **MONTEMAGNO, Carlo** [US/US]; 490 E. Sharon Rd., Glendale, OH 45246 (US). **BHATT, Chandrasmitha** [IN/DK]; Kloster-loekken 8, 3tv, DK-6400 Soenderborg (DK). **YI, Jinsoo** [KR/DK]; Ridepladsen 3E, DK-6430 Nordborg (DK). **STENSTROEM, Theiss** [DK/DK]; Ellegaardvej 36, DK-6400 Soenderborg (DK).

(74) Agent: **YANCY, Jennifer, P.**; Yancy IP Law, PLLC, 5904 Jane Way, Alexandria, VA 22310 (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, BR, BW, BY, BZ, CA, CH, CL, 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, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, 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, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, 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))*

— *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))*

(88) Date of publication of the international search report:
7 July 2011

(54) Title: NANOFABRICATED MEMBRANE USING POLYMERIZED PROTEOLIPOSOMES

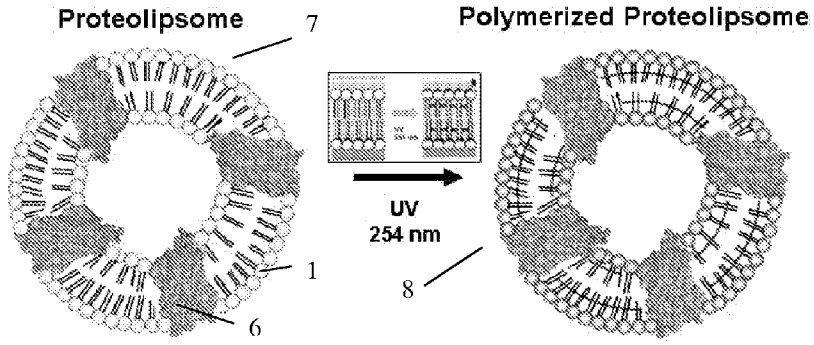


Fig. 2

(57) Abstract: The present invention generally related to a nanofabricated membrane including polymerized proteoliposomes. The nanofabricated membrane is a bio-nano fused selective membrane using protein-incorporated uv-crosslinkable liposomes with a chemical reactive biocompatible interstitial matrix. In the present invention, internally UV-crosslinked protein- incorporated proteolipsomes are used because the proteoliposomes made by natural lipids have a short life time and a weak resistance to the circumstantial stresses such as a high and low temperature, pressure, ionic strength etc. Furthermore, the proteo-vesicles made by amphiphilic block copolymers provide less consistency in accomplishing proper functionality batch to batch because of the inevitable polydiversity of the polymer.

WO 2010/091078 A3