

(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
19 November 2009 (19.11.2009)

PCT

(10) International Publication Number
WO 2009/140429 A3

(51) International Patent Classification:

C08F 299/00 (2006.01) *C08F 293/00* (2006.01)
C08F 299/02 (2006.01) *C12N 15/87* (2006.01)
C08F 299/04 (2006.01) *A61K 48/00* (2006.01)

PHASERX [US/US]; 454 N 34th Street, Seattle, WA 98103 (US).

(21) International Application Number:

PCT/US2009/043849

(22) International Filing Date:

13 May 2009 (13.05.2009)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/052,908 13 May 2008 (13.05.2008) US
 61/052,914 13 May 2008 (13.05.2008) US
 61/091,294 22 August 2008 (22.08.2008) US
 61/112,048 6 November 2008 (06.11.2008) US
 61/140,774 24 December 2008 (24.12.2008) US
 61/171,369 21 April 2009 (21.04.2009) US

(71) Applicants (for all designated States except US): UNI-

VERSITY OF WASHINGTON [US/US]; 4311 - 11th
 Avenue NE, Suite 500, Seattle, WA 98105-4608 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): STAYTON, Patrick, S. [US/US]; 3701 NW 68th Street, Seattle, WA 98117 (US). HOFFMAN, Alan, S. [US/US]; 10616 Riviera Place N.E., Seattle, WA 98125 (US). CONVERTINE, Anthony, J. [US/US]; 522 North 85th Street, Apt. B113, Seattle, WA 98103 (US). DUVALL, Craig, L. [US/US]; 4809 Evanston Avenue N., Seattle, WA 98103 (US). BENOIT, Danielle [US/US]; 12348 38th Avenue NE, Seattle, WA 98125 (US). OVERELL, Robert [US/US]; 1854 NW 195th Street, #302, Shoreline, WA 98177 (US). JOHNSON, Paul [US/US]; 12020 211th Place SE, Snohomish, WA 98296 (US). GALL, Anna [US/US]; 20051 170th Avenue NE, Woodinville, WA 98072 (US). PRIEVE, Mary [US/US]; 4663 NE 178th Street, Lake Forest Park, WA 98155 (US). PASCHAL, Amber [US/US]; 3420 Woodlawn Avenue North, Seattle, WA 98103 (US). DIAB, Charbel [CA/US]; 4431 Evanston Avenue North, #102, Seattle, WA 98103 (US).

[Continued on next page]

(54) Title: MICELLIC ASSEMBLIES

FIG. 1A

Polymer	Structure	Mn Kda	Block Ratio MW ₂ /MW ₁
P7v1	[D] _{9.1K} -[B ₄₈ -P ₂₉ -D ₂₃] _{11.37K}	19	1.2
P7v2	[D] _{10K} -[B ₄₆ -P ₁₈ -D ₃₇] _{8.9K}	19	0.9
P7v3	[D] _{6.5K} -[B ₄₁ -P ₃₉ -D ₂₀] _{9.5K}	16	1.5
P7v6	[D] _{9.1K} -[B ₅₂ -P ₂₆ -D ₂₂] _{21.9K}	31	2.4

x, y, z ARE MOLE %. MOLECULAR WEIGHTS WERE DETERMINED
 BY GEL PERMEATION CHROMATOGRAPHY USING PMMA STANDARDS.
 COMPOSITIONS WERE DETERMINED BY NMR SPECTROSCOPY

FIG. 1B FIRST BLOCK SECOND BLOCK

Polymer	Mn (kDa)	PDI	% PEGMA	% DMAEMA	Mn (kDa)	PDI	% BMA	% DMAEMA	% PAA
P7-PEGMA100	22.24	1.34	100	0	45.5	1.48	50	28	22
P7-PEGMA20	11.44	1.33	17	83	41.0	1.52	56	23	21
P7-PEGMA10	11.61	1.31	10	90	42.0	1.42	51	23	26
P7-PEGMA5	10.60	1.17	5	95	27.1	1.27	-	-	-
P7-PEGMA-50- 14kDa	14.50	1.35	46	54	38.1	1.44	55	25	20
P7-PEGMA-50- 24kDa	24.25	1.23	47	53	38.4	1.45	52	23	25

(57) Abstract: Provided herein are micellar assemblies comprising a plurality of copolymers. In certain instances, micellar assemblies provided herein are pH sensitive particles.



DE, Priyadarsi [IN/US]; 11244 Greenwood Avenue North, #302, Seattle, WA 98133 (US).

(74) **Agent:** RENZONI, George, E.; Christensen O'Connor Johnson Kindness PLLC, 1420 Fifth Avenue, Suite 2800, Seattle, WA 98101 (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, 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, 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))
- 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:**
25 February 2010