



- (51) **International Patent Classification:**
C07K 14/435 (2006.01) *A61K 38/00* (2006.01)
- (21) **International Application Number:**
PCT/US2019/012307
- (22) **International Filing Date:**
04 January 2019 (04.01.2019)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (71) **Applicant:** **KINETA CHRONIC PAIN, LLC** [US/US];
219 Terry Avenue North, Suite 300, Seattle, WA 98109 (US).
- (72) **Inventors:** **MERCADO, Jose**; 11710 Greenwood Avenue North Unit A, Seattle, WA 98133 (US). **TARCHA, Eric, J.**; 24411 SE 17th Place, Sammamish, WA 98075 (US). **POSAKONY, Jeffrey, J.**; 734 N 82nd St, Seattle, WA 98103 (US). **IADONATO, Shawn**; 6629 Holly Place SW, Seattle, WA 98136 (US).
- (74) **Agent:** **ANTLER, Adriane, M.** et al.; Jones Day, 250 Vesey Street, New York, NY 10281-1047 (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, 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, 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, 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).

(54) **Title:** CONOTOXIN PEPTIDE ANALOGS AND USES FOR THE TREATMENT OF PAIN AND INFLAMMATORY CONDITIONS

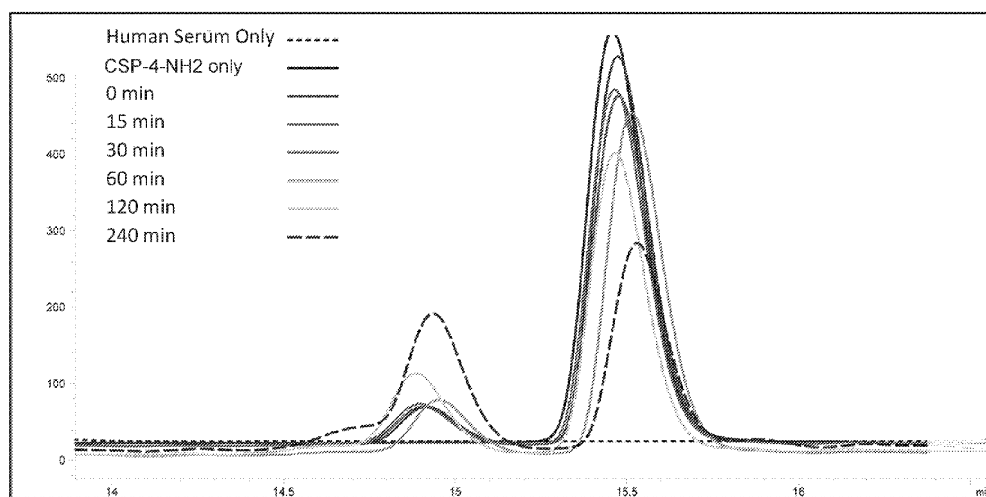


FIG. 1A

(57) **Abstract:** Provided herein are alpha-conotoxin peptide analogs, including alpha-conotoxin peptide analogs that are covalently attached to polyethylene glycol (PEG), and pharmaceutical compositions of such alpha-conotoxin peptide analogs. Also provided herein are methods of treating or preventing a condition conducive to treatment or prevention by inhibition of an $\alpha 9$ -containing nicotinic acetylcholine receptor (nAChR) (e.g., the $\alpha 9\alpha 10$ subtype of the nAChR) in a subject.

[Continued on next page]

Published:

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