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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
20 August 2020 (20.08.2020)

WIPO | PCT

(10) International Publication Number
WO 2020/168036 A1

(51) International Patent Classification:
A61P 37/02 (2006.01) *A61K 38/16* (2006.01)
A61P 37/06 (2006.01) *A61K 45/06* (2006.01)

(21) International Application Number:
PCT/US2020/018045

(22) International Filing Date:
13 February 2020 (13.02.2020)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
62/806,432 15 February 2019 (15.02.2019) US
62/949,181 17 December 2019 (17.12.2019) US

(71) Applicant: **EASTERN VIRGINIA MEDICAL SCHOOL**; Office of Technology Transfer, 721 Fairfax Avenue, Suite 120, Norfolk, VA 23507 (US).

(72) Inventors; and
(71) Applicants: **KRISHNA, Neel, K.** [US/US]; 5220 Powhatan Avenue, Norfolk, VA 23508 (US). **CUNNION, Kenji** [US/US]; 915 Larchmont Crescent, Norfolk, VA 23508 (US).

(74) Agent: **RUBE, Daniel, A.** et al.; Troutman Sanders LLP, 875 Third Avenue, 17th Floor, New York, NY 10022 (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, 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).

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))*
— *with sequence listing part of description (Rule 5.2(a))*

WO 2020/168036 A1

(54) Title: PIC1 VARIANTS WITH IMPROVED SOLUBILITY AND METHODS OF USING THE SAME

(57) Abstract: A method of improving the lifespan of transfused platelets is described. The method may be useful for patients with alloimmunozation who are refractory to transfused platelets. A method of treating delayed hemolytic transfusion reaction is also described. Also described are PIC1 peptide variants with improved solubility and activity.