

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
13 October 2022 (13.10.2022)



(10) International Publication Number
WO 2022/216955 A1

(51) International Patent Classification:
A01N 1/02 (2006.01)

(21) International Application Number:
PCT/US2022/023873

(22) International Filing Date:
07 April 2022 (07.04.2022)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/172,039 07 April 2021 (07.04.2021) US

(71) Applicant: UNIVERSITY OF CINCINNATI [US/US];
2900 Reading Road, Suite 460, Cincinnati, Ohio 45206
(US).

(72) Inventors: CANCELAS, Jose; 8589 Weller Road, Cincinnati, Ohio 45249 (US). ZIA, Majid; 6042 Sargent Ct. N., St. Paul, Minnesota 55110 (US).

(74) Agent: JEFFERIES, David E.; Wood Herron & Evans LLP, 2700 Carew Tower, 441 Vine Street, Cincinnati, Ohio 45202 (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, IT, JM, 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,

(54) Title: IMPROVED ADDITIVE SOLUTION FOR WHOLE BLOOD PRESERVATION AND STORAGE

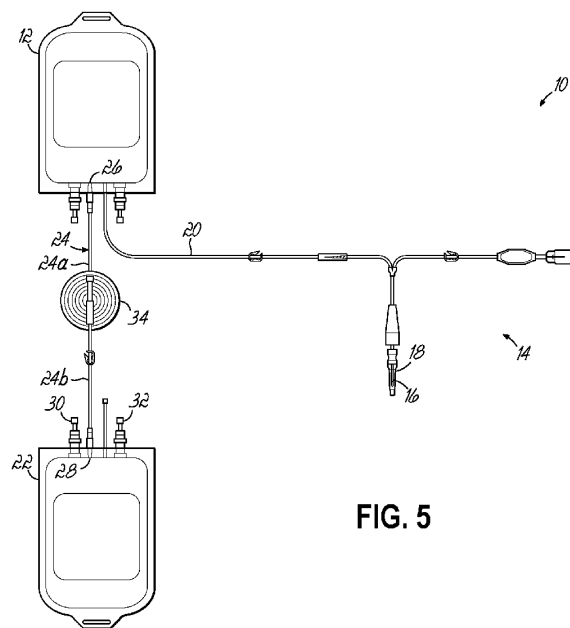


FIG. 5

(57) Abstract: A whole blood anticoagulant composition and system including the composition, wherein the composition includes sodium bicarbonate, mannitol, sodium acetate, and magnesium citrate – and may optionally include sodium bisphosphate and/or adenine. The whole blood storage system may include apparatus that allows for whole blood leukoreduction with pH optimization for improved RBC storage. Such a system can provide leukoreduced whole blood for field medical use, and preserve RBCs and maintain or mostly maintain coagulation activity of the whole blood.

[Continued on next page]

WO 2022/216955 A1

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))