US009410144B2

(12) **United States Patent**
Faustman et al.

(10) **Patent No.: US 9,410,144 B2**
(45) **Date of Patent: *Aug. 9, 2016**

(54) **BLOOD CELL SORTING METHODS AND SYSTEMS**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **14/806,112**

(22) Filed: **Jul. 22, 2015**

(65) **Prior Publication Data**

US 2015/0322424 A1 Nov. 12, 2015

Related U.S. Application Data

(63) Continuation of application No. 14/291,313, filed on May 30, 2014, now abandoned, which is a continuation of application No. 13/481,237, filed on May 25, 2012, now Pat. No. 8,753,888, which is a

(Continued)

(51) **Int. Cl.**
C12N 13/00 (2006.01)
G01N 1/18 (2006.01)
(Continued)

(52) **U.S. Cl.**
CPC ***C12N 13/00*** (2013.01); ***C12N 5/0087*** (2013.01); ***C12N 5/0634*** (2013.01);
(Continued)

(58) **Field of Classification Search**
CPC C12N 5/0081; C12N 5/0087; C12N 13/00; Y10T 436/10; Y10T 436/101666; Y10T 436/108331; Y10T 436/25; Y10T 436/25125; Y10T 436/25375; Y10T 436/255; G01N 33/48; G01N 33/483; G01N 33/487; G01N 33/49; G01N 33/491; G01N 33/56972; G01N 33/80; G01N 1/18
USPC 436/8, 10, 18, 63, 149, 150, 174, 175, 436/177, 178; 435/2, 173.9, 325; 252/408.1; 422/73, 527; 210/695
See application file for complete search history.

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(57) **ABSTRACT**

The invention relates to methods of isolating white blood cells (WBCs) from a sample, e.g., whole blood, using magnetic particles that specifically bind to WBCs and a series of specific steps and conditions. The methods can include one or more of decreasing the viscosity of the sample prior to WBC isolation, agitating the sample at specified frequencies, and/or using a sample container arranged such that all of the sample is placed in close proximity (e.g., within 5, 2, 1, or 0.5 mm) to the source of the magnetic field. The new methods provide for isolation of WBC preparations with high yield, purity, and viability. The methods are designed for compatibility with automation protocols for rapid processing of multiple samples.

20 Claims, 4 Drawing Sheets