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(54) **Buffy coat float**

(57) The invention provides a buffy float for use in a tube and float system for use in separation and axial expansion of a buffy coat. The system includes a transparent, or semi-transparent, flexible sample tube (130) and a rigid separator float (110) having a specific gravity intermediate that of red blood cells and plasma. The sample tube has an elongated sidewall (136) having a first cross-sectional inner diameter. The float consists of a main body portion and one or more support members protruding from the main body portion to engage and support the sidewall of the sample tube. The main body portion and the support members of the float have a cross-sectional diameter less than that of the first cross-sectional inner diameter of the tube (138) when the sample tube is expanded, such as by centrifugation. The main body portion of the float together with an axially aligned portion of the sidewall define an annular volume therebetween. The support members protruding from the main body portion of the float traverse said annular volume to produce one or more analysis areas. During centrifugation, the centrifugal force enlarges the diameter of the tube to permit density-based axial movement of the float in the tube. Thereafter, the centrifugal force is reduced to cause the tube sidewall to return to its first diameter, thereby capturing the float and trapping the buffy coat constituents in the analysis area.

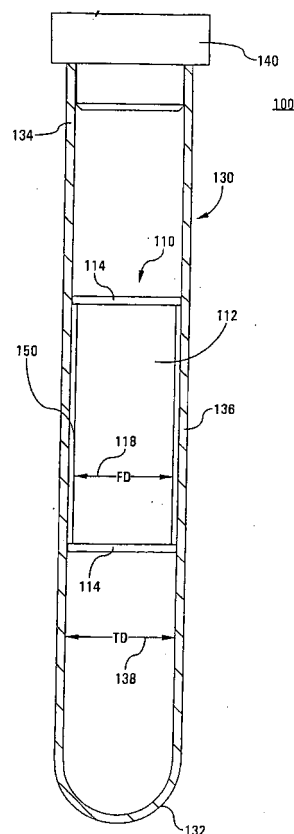


FIG. 1



EUROPEAN SEARCH REPORT

Application Number
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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 4 154 690 A (BALLIES UWE [DE]) 15 May 1979 (1979-05-15) * column 1, line 49 - column 2, line 29 * * column 4, line 39 - column 5, line 2 * * column 6, lines 32-58; figures 1-10 * * page 1, lines 1-13 * -----	1-4,6,8, 11-15	INV. G01N33/53 B01L3/00 B01L3/14
X	EP 1 005 910 A2 (BECTON DICKINSON CO [US]) 7 June 2000 (2000-06-07) * paragraphs [0013], [0016], [0017], [0049], [0055] - [0061]; figures 1-9 * -----	1,2,5,8, 10-15	
X	US 4 417 981 A (NUGENT EDWARD L [US]) 29 November 1983 (1983-11-29) * column 4, line 32 - column 6, line 34; figures 1-16 * -----	1-4,8, 11-14	
X	US 6 277 331 B1 (KONRAD FRANZ [AT]) 21 August 2001 (2001-08-21) * column 16, line 59 - column 18, line 67; figures 10,11 * -----	1,2,5,8, 10-15	
X	US 5 736 033 A (COLEMAN CHARLES M [US] ET AL) 7 April 1998 (1998-04-07) * column 14, line 36 - column 16, line 8; figures 14-19 * -----	1-5,7-15	B01L
A	US 5 776 710 A (LEVINE ROBERT A [US] ET AL) 7 July 1998 (1998-07-07) * column 6, lines 5-30; figure 4 * * columns 7,8 * -----	1-15	
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 13 June 2012	Examiner Tiede, Ralph
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document	

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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13-06-2012

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4154690 A	15-05-1979	AT 381466 B	27-10-1986
		BE 864794 A1	03-07-1978
		CH 631088 A5	30-07-1982
		DK 114078 A	17-09-1978
		FR 2383710 A1	13-10-1978
		GB 1592935 A	15-07-1981
		IT 1093222 B	19-07-1985
		NL 7802786 A	19-09-1978
		SE 441153 B	16-09-1985
		SE 7802737 A	17-09-1978
		SG 66484 G	15-03-1985
		US 4154690 A	15-05-1979
EP 1005910 A2	07-06-2000	EP 1005910 A2	07-06-2000
		JP 4398032 B2	13-01-2010
		JP 2000189406 A	11-07-2000
		US 6516953 B1	11-02-2003
US 4417981 A	29-11-1983	NONE	
US 6277331 B1	21-08-2001	AT 242057 T	15-06-2003
		AT 404317 B	27-10-1998
		AU 3613297 A	25-02-1998
		BR 9710904 A	11-01-2000
		CA 2262919 A1	12-02-1998
		DE 59710234 D1	10-07-2003
		EP 0915737 A2	19-05-1999
		IL 128281 A	01-12-2002
		JP 2000515420 A	21-11-2000
		US 6277331 B1	21-08-2001
		WO 9805426 A2	12-02-1998
US 5736033 A	07-04-1998	NONE	
US 5776710 A	07-07-1998	US 5759794 A	02-06-1998
		US 5776710 A	07-07-1998
		US 5834217 A	10-11-1998

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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其他公开文献	EP2458381A2 EP2458381B1		
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摘要(译)

本发明提供了一种用于管和浮子系统的血沉棕黄浮子，用于血沉棕黄层的分离和轴向膨胀。该系统包括透明或半透明的柔性样品管（130）和刚性分离器浮子（110），其具有红细胞和血浆中间比重的比重。样品管具有细长的侧壁（136），其具有第一横截面内径。浮子包括主体部分和从主体部分突出的一个或多个支撑构件，以接合和支撑样品管的侧壁。当样品管膨胀时，例如通过离心，浮子的主体部分和支撑构件的横截面直径小于管（138）的第一横截面内径的横截面直径。浮子的主体部分与侧壁的轴向对齐部分一起限定了它们之间的环形容积。从浮子的主体部分突出的支撑构件横穿所述环形体积以产生一个或多个分析区域。在离心过程中，离心力增大了管的直径，以允许浮子在管中基于密度的轴向移动。此后，减小离心力以使管侧壁返回其第一直径，从而捕获浮子并将血沉棕黄层成分捕获在分析区域中。

