

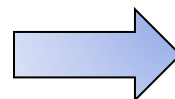
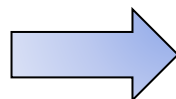
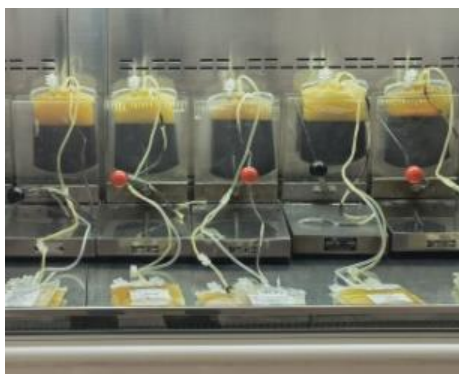
血液制备技术介绍

费卡医疗技术 市场部
檀叶青 Tanya



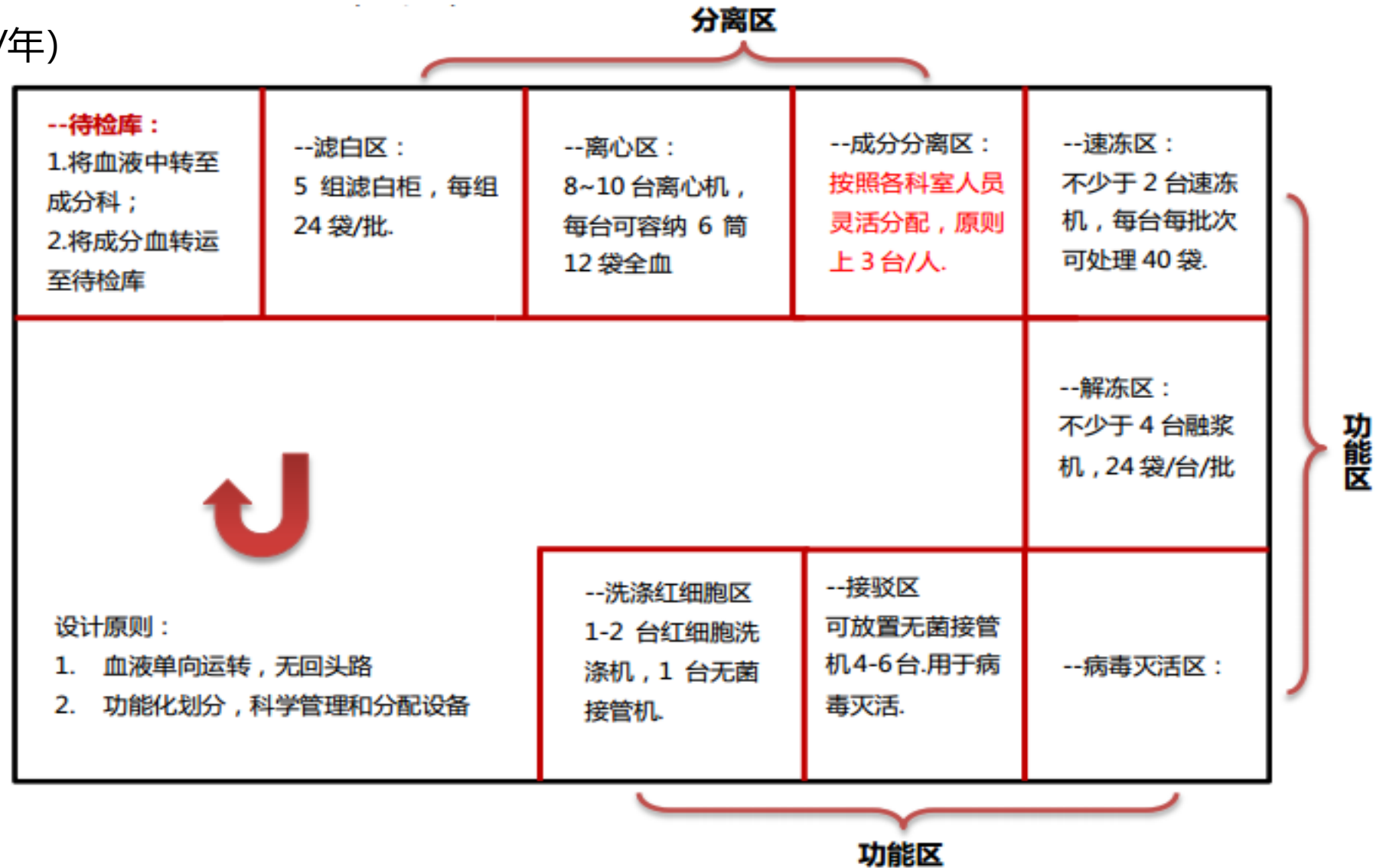
血液成分制备的发展历史

- 第一代：手动分离（血浆，红细胞，血小板）
- 第二代：自动成分制备替代手工（批量处理提高工作效率，标准化管理）
- 第三代：自动成分制备标准化+信息化管理（全流程可追溯）



成分血制备标准化体系

成分科科室布局 (40t/年)





FRESENIUS
KABI

caring for life

成分血制备标准化体系



滤白柜



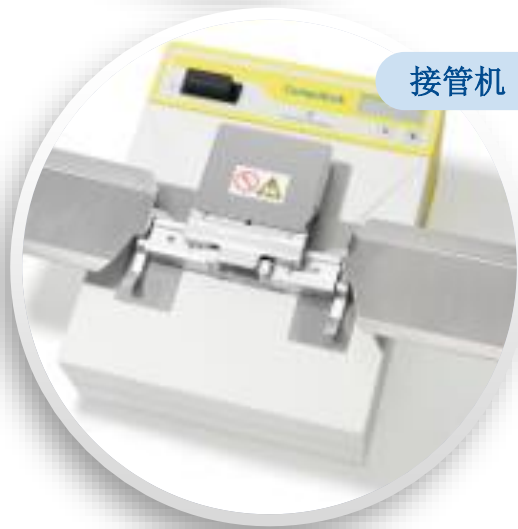
低温离心机



成分制备仪



热合机



接管机



速冻机



病毒灭活柜



冷沉淀制备仪

上海申康检验设备有限公司

一机多用-满足成分科室多样化制备需求



除分浆、悬浮红等常规的成

分血制备外, CompoMat

血液成分制备仪还可满足更

多二次制备和精细化分离的

操作需求。

浓缩血小板

白膜层回收率高, 终成品质量稳定



洗涤红细胞

分离速度快, 操作方便



冷沉淀

离心法-制备时间更灵活, 批量产出, 效率高



分小血

精确分装, 更充分利用血液资源

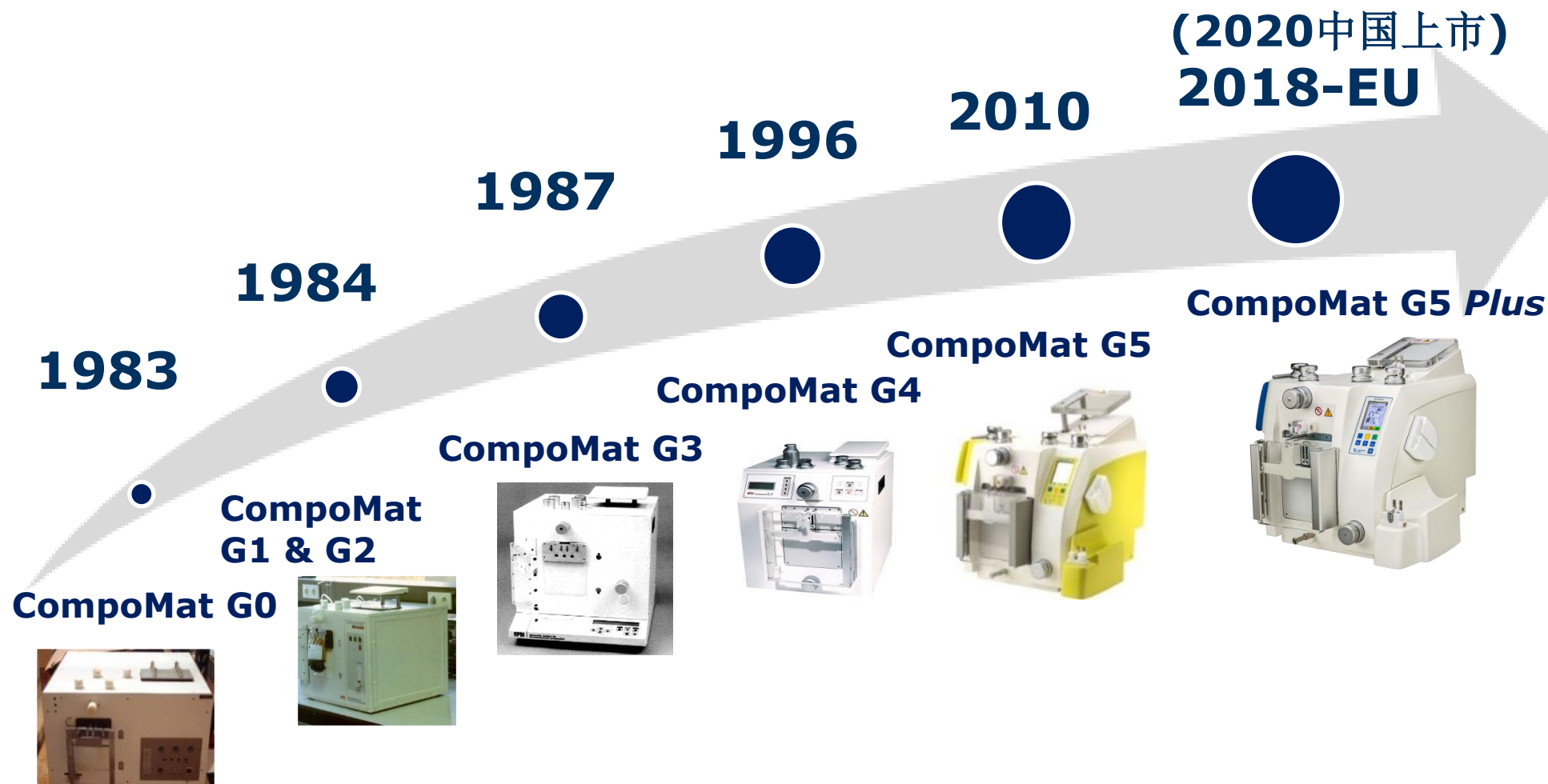




**FRESENIUS
KABI**

caring for life

CompoMat系列血液成分制备仪





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caring for life

CompoMat系列血液成分制备仪



浓缩血小板制备工艺改进

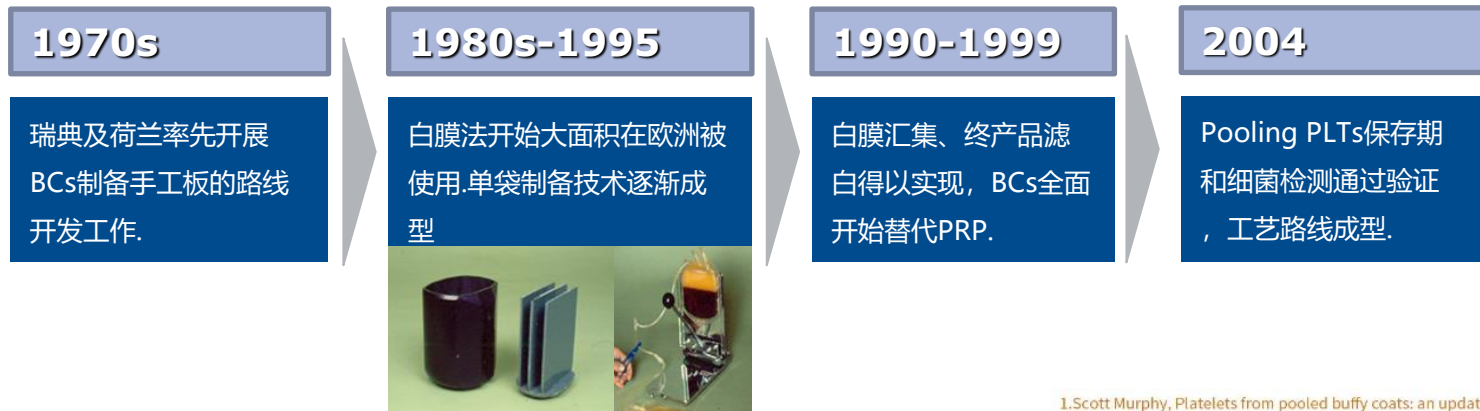


Dr. Ruby N.I. Pietersz(1942-2018),

- 内科医师，1982年加入Sanquin血站，任副院长、站长。
- 毕生致力于手工血小板工艺路线的研究，并于上世纪80-90年代在欧洲成功将白膜法制备PLTs进行了推广。
- 由于其突出的贡献，荷兰输血协会（NVB）于2007年向Ruby教授颁发了终身荣誉奖。

从上世纪80年代开始，荷兰Sanquin血站 研发了白膜法（Buffy Coat）制备浓缩血小板的工艺，并将其推广指全球采供血机构，替代传统的富浆法（PRP），从根本上解决了手工板的聚集和回收问题，回收率由55%提高至82%^[1,2]，BC法大幅度改善了手工板产品的质量，使其在临床输注方面与机采血小板等效^[3]。

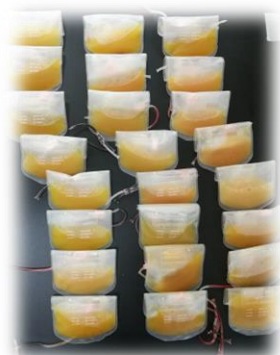
白膜法制备手工血小板工艺开发路线概览



1.Scott Murphy, Platelets from pooled buffy coats: an update, TRANSFUSION, 2005(45): 634-639.
 2.Daniela Pasqualetti et al., Blood component fractionation: manual versus automatic procedures, Transfusion and Apheresis Science, 2004, 30: 23-28.
 3.Bruna Alice Gomes de Melo et al, Distribution, Recovery and Concentration of Platelets and Leukocytes in L-PRP Prepared by Centrifugation, Colloids Surf B Biointerfaces, 2018 (161): 288-295.



CompoMat 成分制备---浓缩血小板



CompoMat可提高17%的浓缩血小板制备效率*，且全过程100%自动化操作，解放操作员双手。

● 三挤压板技术

- 三电机独立控制挤压板
- 仿人手设计
- 细腻挤压，不易冲红
- 提高白膜层和血小板终产品回收率**： T&B
- ~BCs 90%， PLTs > 85%

● 步进电力驱动

- 多参数控制
- 直线步进电机
- 无独立气泵

Source:*天津血液中心，测试数据，平均5袋400ml单袋PLTs可以汇集1单位治疗量，相比国标要求少一袋，节省资源。

**Ruby N.I. Pietersz, Amsterdam, Sanquin Blood Supply Company.

BCs点我放映

三隔板点我放映

独家三挤压板技术---更快速、更精准



上挤压板

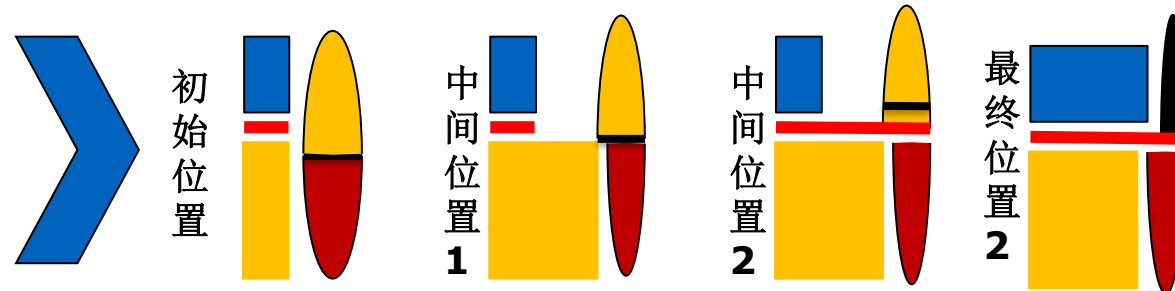


横隔板

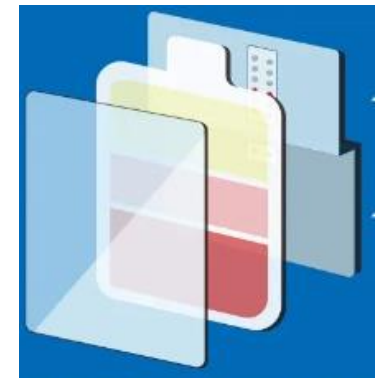


下挤压板

三挤压板挤压白膜
过程演示



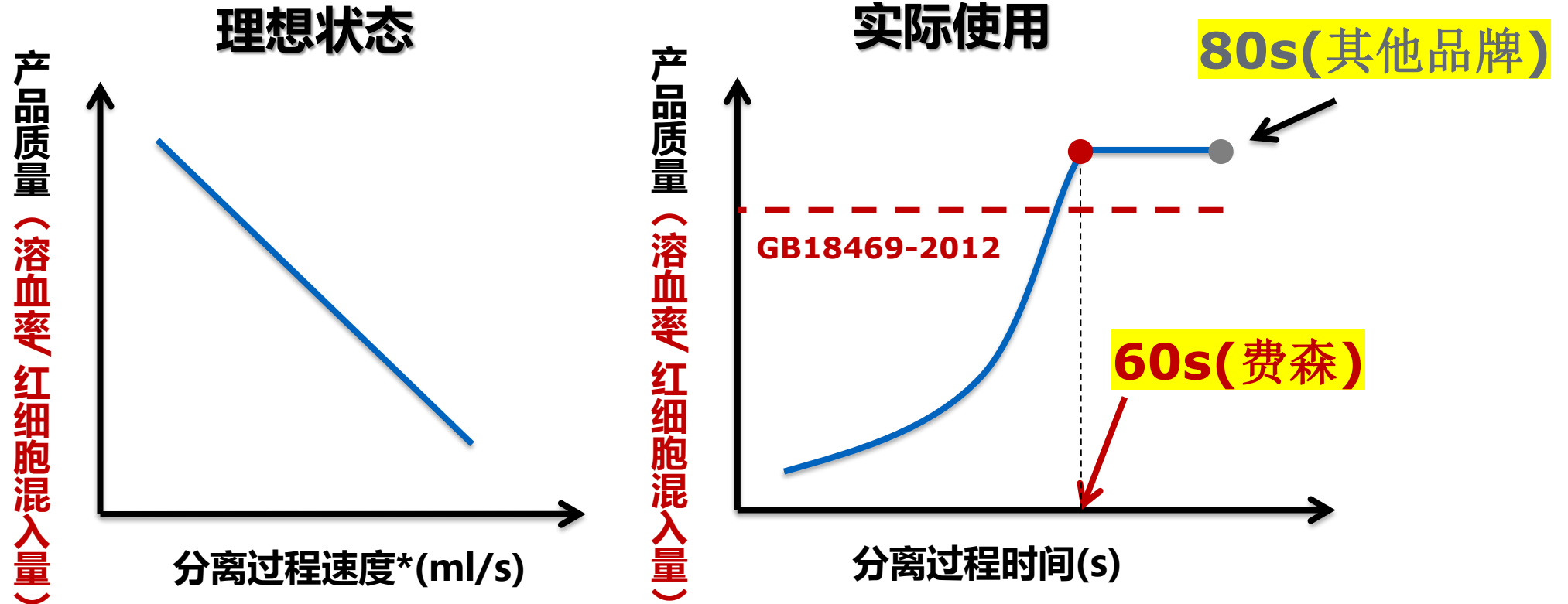
白膜层回收率
>90%



● **技术优势:**

- 三挤压板**相互独立运行**, 可各自独立编程移动
- 仿人手关节设计**, 挤压过程细腻灵活, 精度可达0.1mm
- 横隔板**有效降低血浆及白膜层产品中的红细胞混入

独家三挤压板技术---更快速、更精准



*母袋管路中的流速固定

- “多、快、好、省” 考验设备的分离精度!
- 挤压板动力系统设计是关键!
- 结合血站实际工作操作设置程序, 控制分离速度



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成分制备的自动化的最后一步---全自动掰塞

CompoMat G5 Plus-双模式自动掰塞—完成自动分离最后一步



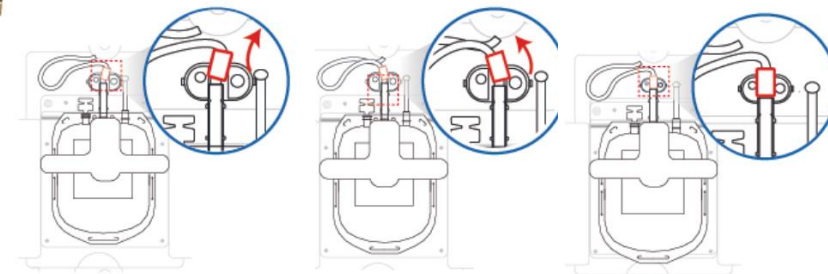
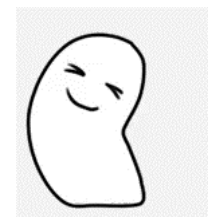
CompoFlow System
simply ahead



CompoFlow 掰塞器



传统血袋自动掰塞器

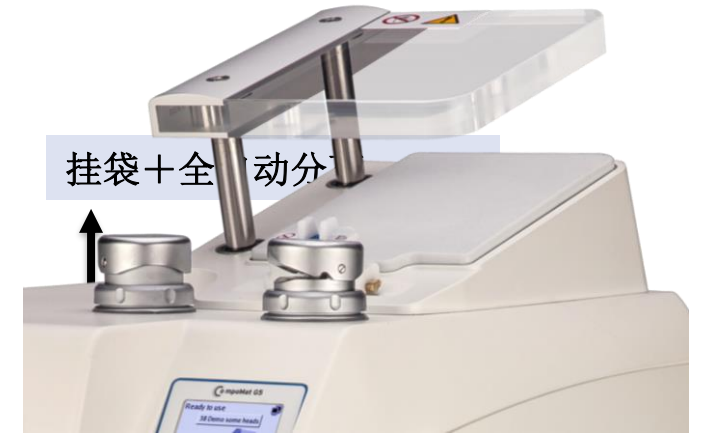
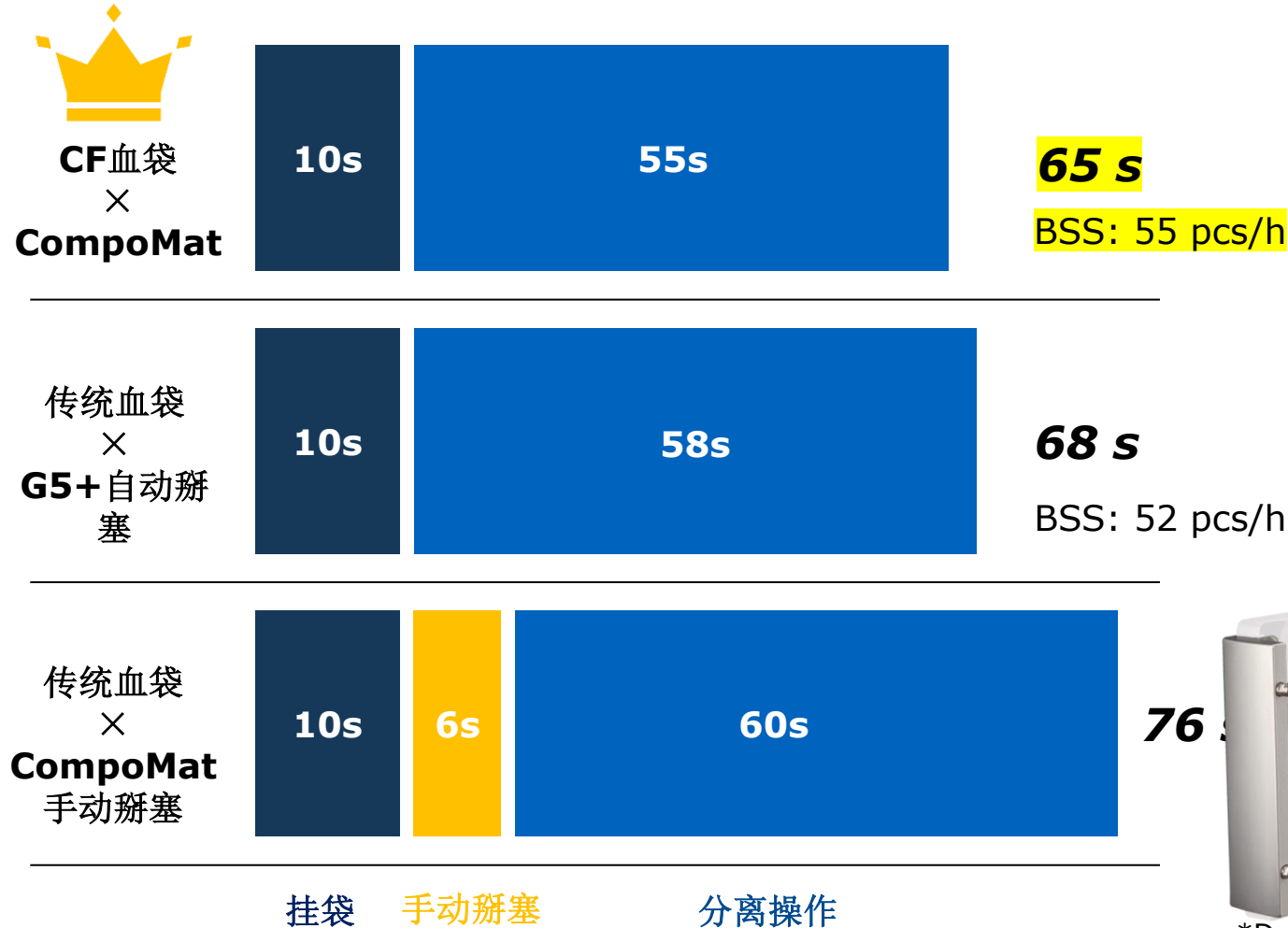


双模式自动掰塞，切换方便
兼容CompoMat G5/G5 Plus
减少职业伤害，节省分离时间

成分分离与制备---分离效率 > 分离速度

高效掰塞、提升10.5%-14.5%血液分离效率

CompoMat G5 Plus工作效率: 55 袋/小时/台



*Data: Chengdu TES1



信息化：费森尤斯卡比数据管理系统

数据查询、修改、打印、报表输出

G4/G5原始数据：

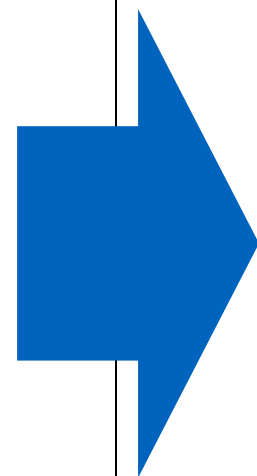
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```

G5 plus

The screenshot displays the 'FRESENIUS KABI 费森成分数据管理系统' (Fresenius Kabi Component Data Management System) login page. The login form includes fields for '账号' (Account) with 'admin' and '密码' (Password) with a masked input. A '登录' (Login) button is present. Below the login form, there is a navigation menu with options like '首页' (Home), '数据列表' (Data List), '数据修改' (Data Modify), '数据删除' (Data Delete), '数据打印' (Data Print), and '数据导出' (Data Export). The main content area shows a table with columns for '序号' (Serial Number), '状态' (Status), '采集时间' (Collection Time), '结束时间' (End Time), '持续时间' (Duration), '日期' (Date), '结束标志' (End Flag), '班次编号' (Shift Number), and '控制号' (Control Number). The table contains 17 rows of data.



This screenshot shows the data analysis dashboard of the 'FRESENIUS KABI 费森成分数据管理系统'. It features a '产品选择' (Product Selection) dropdown set to '2020/11/1' and a '数据日期' (Data Date) dropdown set to '2020/11/20'. The dashboard includes a '数据列表' (Data List) table with columns for '序号' (Serial Number), '数量' (Quantity), and '占比' (Percentage). Below the table, there are two charts: a '饼图' (Pie Chart) showing the distribution of data across different categories, and a '柱状图' (Bar Chart) showing the quantity of data for each category. The bar chart has a y-axis labeled '数量' (Quantity) ranging from 0 to 3000. The pie chart shows various segments with their respective percentages.

国内外关于CompoMat 的文献资料



Vox Sanguinis
The International Journal of Transfusion Medicine

ORIGINAL PAPER

Separation of centrifuged whole blood and pooled buffy coats using the new CompoMat G5: 3 years experience

© 2014 International Society of Blood Transfusion
DOI: 10.1111/vox.12140

International Society of Blood Transfusion
Vox Sanguinis (2014)

Наставна база
Медицинског факултета
у Београду

BACKGROUN

Standard alternative products

AIM:

In order to compare the quality of the product

MATERIALS AND METHODS

The first time the use of CompoMat G5 causes all separate bags. The plasma

L. J. Bontekoe
¹ Department of
² Processing Dep

Vox Sa

Received: 24 Sep
revised 28 Jan
accepted 3 Feb

Int J Hematol (2011) 93:660–663
DOI 10.1007/s12185-011-0840-9

ORIGINAL ARTICLE

Improved BC method of BCs twice from whole blood

Xiao-yan Deng · Xiao-man Wu · Yang Hong Luo · Hong-yun Jia · Zhong-ying Bo He · Chuan-xi Wang

Received: 24 November 2010 / Revised: 24 March 2011
© The Japanese Society of Hematology 2011

Abstract The aim of this paper was to improve the buffy coat (BC) method of CompoMat G5 by automated expression of BCs twice from whole blood (WB) in top and top (T&T) bags. WB was centrifuged by hard spin centrifugation (2,988g, 10 min) to separate the plasma from the whole blood.

The International Journal of Transfusion Medicine
Vox Sanguinis

Journal compilation © 2010 International Society of Blood Transfusion
DOI: 10.1111/j.1423-0410.2009.01295.x

Vox Sanguinis (2010) 99, 1–15
© 2010 The Author(s)

REVIEW

Buffy-coat-derived pooled platelet concentrates and apheresis platelet concentrates: which product type should be preferred?

H. Schrezenmeier^{1,2} & E. Seifried^{1,3}

¹Red Cross Blood Service Baden-Württemberg-Hessen, Germany
²Institute of Clinical Transfusion Medicine and Immunogenetics Ulm, University of Ulm, Ulm, Germany
³Institute of Transfusion Medicine and Immunohematology, Johann-Wolfgang-von-Goethe University, Frankfurt, Germany

Vox Sanguinis

There is an ongoing debate whether platelet concentrates (PCs) prepared from either whole-blood donations or by plateletpheresis are superior. Usage of these two product types varies greatly between countries and individual institutions. Some use mainly apheresis PCs; others prefer pooled PCs which are produced from whole-blood donations.

This review summarizes the existing information on these product types. In the first part data on quality, efficacy and safety are reviewed. It is important to note that the issue cannot be answered just by comparing 'the' apheresis platelet concentrate versus 'the' pooled platelet concentrate. Other factors which determine the quality of a product, e.g. residual leukocyte count, plasma content, additive solution or storage period may be even more important. The focus of the debate should be shifted. It is much more needed to further improve the overall quality of PCs and to optimize treatment of thrombocytopenic patients than to concentrate on a single-edged view on just the preparation method.

In the second part of this review we compare the product types from the donor's point of view. If PCs which are equally safe and effective can be obtained by various methods, ethics and the safety of the healthy volunteer donor tips the scales.

The decision on the use of a particular product type should take into account all aspects of efficacy, side effects and availability of the product as well as the donor's perspective and the commitment to maximize the use of the valuable whole-blood donation.

Key words: Adverse events, donor complications, platelet apheresis, platelet

Received: 23 March 2009,
revised 16 November 2009,
accepted 18 November 2009

支持国内易折键自动掰塞

实现血液自动化分离

高品质掰塞器配件

G5 Plus设备还支持国内易折键自动掰塞

MedTech企业社会责任

多个国家级、地方级协会、学会
会员单位，为行业发展建言献策



引进国际先进标准



搭建国内外学术交流平台



参与行业标准制定



组织、参加公益献血，
积极推广无偿献血-“倡导者先行”



费卡中国献血活动

11年爱心长跑



爱心传承
倡导者先行

青春热血
关爱生命

热血
让关爱更浪漫

献血
让生命更珍贵

关爱
因我“费”凡



2013-2023 11年热血，燃情岁月

近 **5,000** 费卡中国员工/家属/经销商伙伴

捐献血小板 **1,190** 个单位

捐献全血 **465,700** ml

挽救生命 **3,518** 次



第十一届无偿献血活动持续进行中



谢谢