
RAPID PLATELET POOR PLASMA PREPARATION FOR COAGULATION TESTING WITH THE HELMER QUICKSPIN PLUS CENTRIFUGE

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Rapid Platelet Poor Plasma Preparation for Coagulation Testing With the Helmer QuickSpin Plus Centrifuge

Introduction

The Helmer QuickSpin Plus is a small high-speed clinical bench top centrifuge developed for stat sample applications. The fixed angle rotor holds up to 8 tubes and accommodates tube capacities from 2.7mL (with included inserts) to 15mL. The QuickSpin Plus has spin times programmable in increments of one minute and speeds up to 8000 RPM programmable in increments of 100.

Study Objective

The samples were tested to determine if the QuickSpin Plus could consistently produce platelet poor plasma in just two minutes.

Methodology

Citrate tubes (BD #363083, 13x75mm, 2.7mL, plastic) were collected from 33 individuals and centrifuged in the QuickSpin Plus for two minutes at 7500 RPM. The plasma samples were then tested for platelet counts using the Coulter LH and Coulter STKS analyzers.

Results

Table 1, Table 2, and Chart 1 present the results of the statistical analysis. Table 3 contains the original data, including platelet counts before and after centrifugation.

Data Analysis

Results for the QuickSpin Plus were analyzed to assess the centrifuge's ability to rapidly produce platelet poor plasma. The mean and standard deviation (SD) for the samples were

calculated post-centrifugation. The range of sample platelet counts before centrifugation ranged from 50×10^3 to 420×10^3 .

Residual platelet results were evaluated based on recommendations of the Clinical and Laboratory Standards Institute (CLSI) for platelet poor plasma (less than 10,000/ μ L).

Interpretation

BD citrate tubes spun in the QuickSpin Plus for 2 minutes showed consistent achievable results. The QuickSpin Plus was able to produce tubes with residual platelet counts of less than 7,000/ μ L for 100% of samples, and 20 (60%) of the samples had counts of 3,000/ μ L or less.

Conclusion

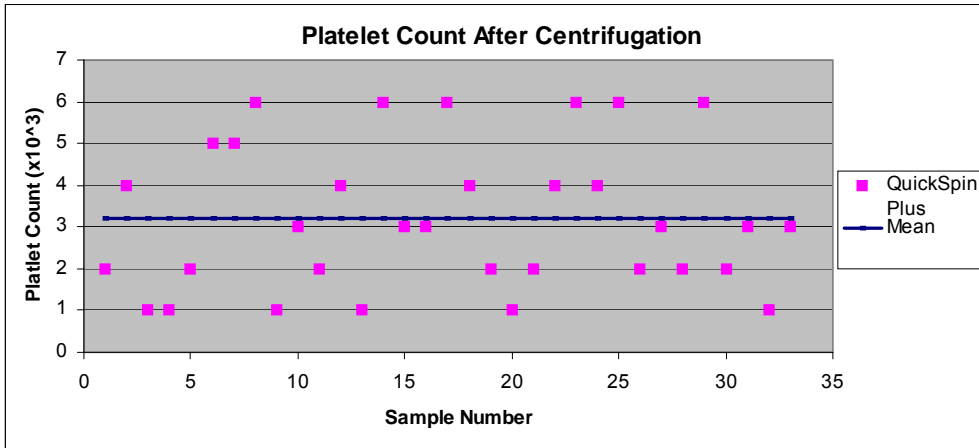
This study demonstrates that the QuickSpin Plus is able to consistently produce platelet poor plasma in two minutes, well within the acceptable range given by CLSI for platelet poor plasma.

Additionally, the results of this study indicate that the QuickSpin Plus is capable of providing improved productivity and efficiency in the laboratory due to faster turnaround times.

**Table 1
Platelet Count Statistical Summary**

Statistical Summary		
QuickSpin Plus	Mean	Standard Dev.
Platelet Count	3.212	1.746

**Chart 1
Sample Platelet Count Chart**



**Table 2
Platelet Count by Thousands Per Microliter**

Platelet Count By Range for Samples Spun in the QuickSpin Plus Centrifuge				
Range (in thousands)	0-3	4-6	7-9	10+
# of Samples in range	20	13	0	0

The above chart shows the number of samples in each platelet count range. For example, 20 samples had platelet counts of 0 to 3000 per microliter, while zero samples had platelet counts of more than 10,000.

Table 3
Original Data

Sample #	Platelet Counts ($\times 10^3$)	
	Pre-Centrifugation	Post-Centrifugation QuickSpin Plus
1	160	2
2	226	4
3	160	1
4	109	1
5	334	2
6	122	5
7	228	5
8	156	6
9	182	1
10	196	3
11	81	2
12	76	4
13	267	1
14	366	6
15	383	3
16	187	3
17	136	6
18	139	4
19	164	2
20	177	1
21	420	2
22	140	4
23	180	6
24	50	4
25	170	6
26	221	2
27	242	3
28	129	2
29	124	6
30	194	2
31	213	3
32	180	1
33	153	3
AVG	189.848	3.212