




Enrichment Test Report

The test was taken for simple diagnostic purpose
Not for any clinical research purposes.

Division	Position	Name	Date	Signature
Authored by	Q. A. team	B.H. LEE	2011.12.01	
Reviewed by	QMR	B.H. LEE	2011.12.01	
Approved by	President	B.H. LEE	2011.12.01	



ENRICHMENT TEST REPORT

Complete Blood Count(CBC) Test

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1. Introduction

CBC(Complete Blood Counts) test is usually done for blood test purpose for health. But in PRP research fields, this test is used to evaluate the level of platelet enrichment of PRP systems. Therefore, this test was conducted using Ycellbio-Kit in order to evaluate its performance in concentrating platelets.

2. Objective

The purpose of this enrichment test is to evaluate Ycellbio-Kit's performance by calculating platelet counts from Ycellbio-Kit and demonstrate that it's effective enough to be used for PRP treatment.

3. Materials and Methods

3.1. Materials


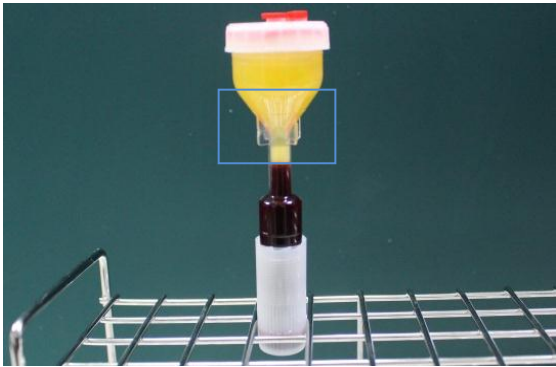
Item	Subject Device	Picture
Test Date	2012.04.23	
Inspector	Bum Ha Lee	
Model Name	Ycellbio-Kit	
Description	Sterile PRP Separation Kit	
Test Sample	Lot Number : 2J224	

3.2 Methods

Draw 15 mL peripheral blood samples twice from 3 healthy subjects — including 1 man and 2 women, which will be totally 30mL from each subject, and then take platelets counts in whole blood of the subjects. The next step was centrifugation. Blood samples were transferred into Ycellbio tubes and the blood filled tubes were spun in a swing type centrifuge at 3,200 rpm for 4 minutes. Once blood is separated, extract PRP from the tube and count platelets in PRP liquid. PRP enrichment can be evaluated by comparing platelets counts both in whole blood and in PRP.

4. Results

Table 1. Before and After Blood Separation

		Whole Blood	PRP			
						
Subject	PLT Count / microliter			PLT Enrichment		
		in whole blood	in PRP			
Subject A	1 st	226	1716	7.6 x		
	2 nd	227	1697	7.5 x		
Subject B	1 st	183	1583	8.7 x		
	2 nd	182	1604	8.8 x		
Subject C	1 st	164	1489	9.1 x		
	2 nd	162	1521	9.4 x		

The above CBC test showed that Ycellbio-Kit could concentrate platelets about 7.6 and 7.5 folds greater each than baseline in the blood samples of Subject A, about 8.7 and 8.8 folds greater in Subject B's, and about 9.1 and 9.4 folds greater in Subject C's. In average, platelet counts in Ycellbio PRP were about 1,600,000 per microliter and 8.5 times concentrated above the counts in whole blood.

5. Conclusion

Based on the CBC test, it's proved that Ycellbio-Kit works effectively to separate and extract high concentrated Platelet Rich Plasma that is enriched much more than baseline; therefore, it was demonstrated that Ycellbio-Kit perform properly in regards to platelet enrichments.



ENRICHMENT TEST REPORT

Complete Blood Count(CBC) Test

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[Annex 01] CBC Test Sheets

Sheet

RESULT

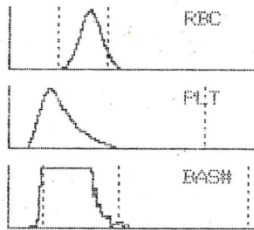
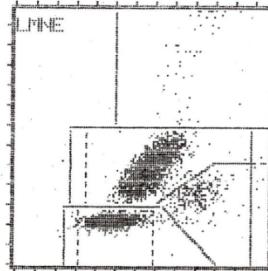
#1 WB

DATE 12/04/23
SEQ. # 20
ID 1 WB

TIME 18:45:0

Subject # 1 - Whole Blood

WBC	4.6	$10^3/mm^3$
RBC	4.68	$10^6/mm^3$
HGB	15.2	g/dl
HCT	44.3	%
MCV	94	μm^3
MCH	32.4	pg
MCHC	34.3	g/dl
RDW	12.0	%
PLT	226	$10^3/mm^3$
MPV	7.4	μm^3
PCT	0.168	%
PDW	11.3	%
LYM%	37.9	1.73
MON%	6.5	0.30
NEU%	53.2	2.42
EOS%	1.6	0.07
BAS%	0.8	0.04
ALY%	0.5	0.02
LIC%	0.7	0.03

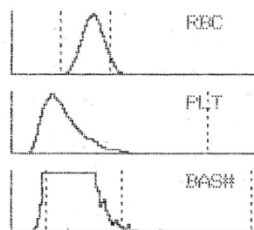
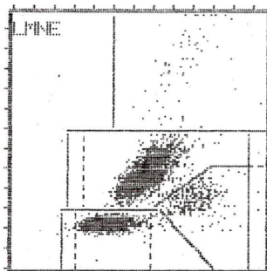


RESULT

DATE 12/04/23
SEQ. # 21
ID 2

TIME 18:46:09

WBC	4.5	$10^3/mm^3$
RBC	4.70	$10^6/mm^3$
HGB	15.1	g/dl
HCT	44.4	%
MCV	95	μm^3
MCH	32.2	pg
MCHC	34.0	g/dl
RDW	12.3	%
PLT	227	$10^3/mm^3$
MPV	7.3	μm^3
PCT	0.166	%
PDW	11.5	%
LYM%	38.8	1.73
MON%	7.1	0.32
NEU%	51.3	2.28
EOS%	2.1	0.09
BAS%	0.7	0.03
ALY%	0.4	0.02
LIC%	0.7	0.03



RESULT #1 PRP

Subject # 1 - PRP

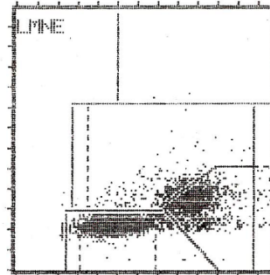
DATE 12/04/23
SEQ. # 16
ID 1 PRP

TIME 18:37:41

FLAGS WBC:

LL
RBC: MIC FLT:

WBC	16.4	H	10 ³ /mm ³
RBC	0.10	L	10 ⁶ /mm ³
HGB	0.3	L	g/dl
HCT	0.8	L	%
MCV	75	L	μm ³
MCH	0.0	L	pg
MCHC	0.0	L	g/dl
RDW	4.6	L	%
PLT	1716	H	10 ³ /mm ³
MPV	7.6		μm ³
PCT	1.296	H	%
PDW	12.0		%

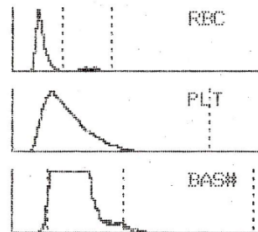


LEUCOCYTOSIS LYMPHOCYTOSIS
NEUTROPENIA NRBCS
MONOCYTOSIS

ANEMIA MICROCYTES+
HYPOCHROMIA

THROMBOCYTOSIS

LYM%	80.8!H	13.2!H
MON%	13.3!H	2.18!H
NEU%	4.6!L	0.75!L
EOS%	0.0!	0.00!
BAS%	1.3	0.21 h
ALY%	1.0!	0.16!
LIC%	0.8!	0.13!



RESULT

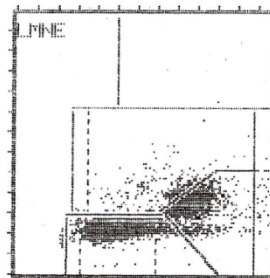
DATE 12/04/23
SEQ. # 17
ID 2

TIME 18:38:53

FLAGS WBC:

LL ALY
RBC: MIC PLT:

WBC	16.3	H	10 ³ /mm ³
RBC	0.11	L	10 ⁶ /mm ³
HGB	0.3	L	g/dl
HCT	0.7	#L	%
MCV	67	#L	μm ³
MCH	0.0	L	pg
MCHC	0.0	#L	g/dl
RDW	5.1	L	%
PLT	1697	H	10 ³ /mm ³
MPV	7.6		μm ³
PCT	1.281	H	%
PDW	12.3		%

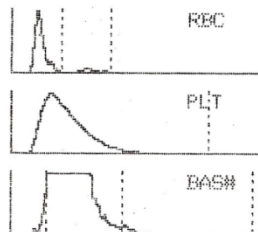


LEUCOCYTOSIS LYMPHOCYTOSIS
NEUTROPENIA NRBCS
MONOCYTOSIS

ANEMIA MICROCYTES+
MICROCYTOSIS HYPOCHROMIA

THROMBOCYTOSIS

LYM%	80.7!H	13.1!H
MON%	13.4!H	2.18!H
NEU%	4.5!L	0.73!L
EOS%	0.0!	0.00!
BAS%	1.4	0.23 h
ALY%	1.3!	0.21!h
LIC%	0.8!	0.13!



Sheet

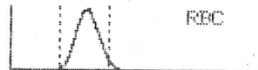
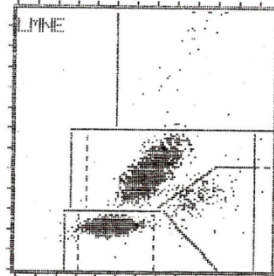
RESULT

#2 WB

Subject # 2 - Whole Blood TIME 18:47:1

DATE 12/04/23
 SEQ. # 22
 ID 2 WB

WBC	4.4	$10^3/mm^3$
RBC	4.65	$10^6/mm^3$
HGB	14.0	g/dl
HCT	41.0	%
MCV	88	μm^3
MCH	30.0	pg
MCHC	34.0	g/dl
RDW	13.3	%
PLT	183	$10^3/mm^3$
MPV	7.9	μm^3
PCT	0.145	%
PDW	13.8	%
LYM%	46.7	2.07
MON%	4.9	0.22
NEU%	46.9	2.08
EOS%	1.0	0.04
BAS%	0.5	0.02
ALY%	0.4	0.02
LIC%	0.3	0.01



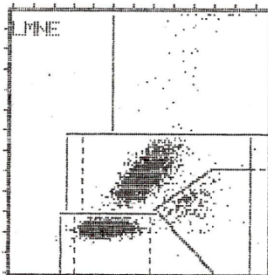
RESULT

DATE 12/04/23
 SEQ. # 23
 ID 2

TIME 18:48:20

FLAGS WBC: L1

RBC:		FLT:	
WBC	<u>4.6</u> /	$10^3/mm^3$	
RBC	<u>4.67</u>	$10^6/mm^3$	
HGB	14.0	g/dl	
HCT	41.1	%	
MCV	88	μm^3	
MCH	29.9	pg	
MCHC	34.0	g/dl	
RDW	13.3	%	
PLT	182	$10^3/mm^3$	
MPV	8.2	μm^3	
PCT	0.149	%	
PDW	13.8	%	
LYM%	<u>44.4</u> /	<u>2.13</u> /	
MON%	<u>5.2</u> /	<u>0.24</u> /	
NEU%	<u>46.6</u> /	<u>2.14</u> /	
EOS%	<u>1.3</u> /	<u>0.06</u> /	
BAS%	<u>0.5</u> /	<u>0.02</u> /	
ALY%	<u>0.4</u> /	<u>0.02</u> /	
LIC%	<u>0.2</u> /	<u>0.01</u> /	



NRBCS
 PLATELET AGGREGATES



RESULT

#2 PRP

Sheet

Subject # 2 - PRP

TIME 18:40:0

DATE 12/04/23
SEQ. # 18
ID 2PRP

FLAGS WBC: L1

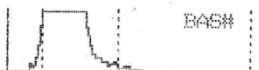
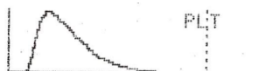
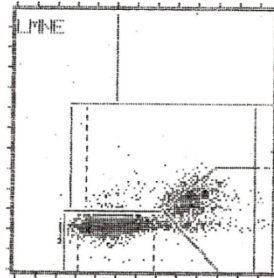
LL

RBC: MIC PLT:

WBC	<u>14.6</u> <i>H</i>	10 ³ /mm ³
RBC	0.13 L	10 ⁶ /mm ³
HGB	0.6 L	g/dl
HCT	<u>0.8</u> <i>#L</i>	%
MCV	<u>57</u> <i>#L</i>	μm ³
MCH	0.0 L	pg
MCHC	<u>0.0</u> <i>#L</i>	g/dl
RDW	<u>6.7</u> L	%
PLT	1583 H	10 ³ /mm ³
MPV	8.2	μm ³
PCT	<u>1.297</u> H	%
PDW	14.5	%

LYM%	<u>87.8</u> <i>H</i>	<u>12.8</u> <i>H</i>
MON%	<u>7.9</u> <i>L</i>	<u>1.15</u> <i>L</i>
NEU%	<u>3.2</u> <i>L</i>	<u>0.47</u> <i>L</i>
EOS%	<u>0.0</u> <i>L</i>	<u>0.00</u> <i>L</i>
BAS%	<u>1.1</u> <i>L</i>	<u>0.16</u> <i>L</i>

ALY%	<u>0.8</u> <i>L</i>	<u>0.12</u> <i>L</i>
LIC%	<u>0.4</u> <i>L</i>	<u>0.05</u> <i>L</i>



LEUCOCYTOSIS LYMPHOCYTOSIS
NEUTROPENIA NRBCS

ANEMIA MICROCYTES+
MICROCYTOSIS HYPOCHROMIA

THROMBOCYTOSIS

RESULT

DATE 12/04/23
SEQ. # 19
ID 2

TIME 18:41:17

FLAGS WBC:

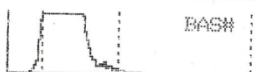
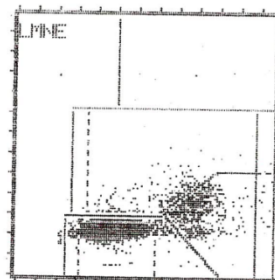
LL

RBC: MIC PLT:

WBC	14.6 H	10 ³ /mm ³
RBC	0.13 L	10 ⁶ /mm ³
HGB	0.6 L	g/dl
HCT	0.8 L	%
MCV	60 L	μm ³
MCH	0.0 L	pg
MCHC	0.0 L	g/dl
RDW	6.5 L	%
PLT	1604 H	10 ³ /mm ³
MPV	8.2	μm ³
PCT	1.314 H	%
PDW	14.3	%

LYM%	<u>88.1</u> <i>H</i>	<u>12.8</u> <i>H</i>
MON%	<u>7.5</u> <i>L</i>	<u>1.09</u> <i>L</i>
NEU%	<u>3.6</u> <i>L</i>	<u>0.53</u> <i>L</i>
EOS%	<u>0.0</u> <i>L</i>	<u>0.00</u> <i>L</i>
BAS%	0.8	0.12

ALY%	<u>0.7</u> <i>L</i>	<u>0.11</u> <i>L</i>
LIC%	<u>0.5</u> <i>L</i>	<u>0.07</u> <i>L</i>



LEUCOCYTOSIS LYMPHOCYTOSIS
NEUTROPENIA NRBCS

ANEMIA MICROCYTES+
MICROCYTOSIS HYPOCHROMIA

THROMBOCYTOSIS

Sheet

RESULT

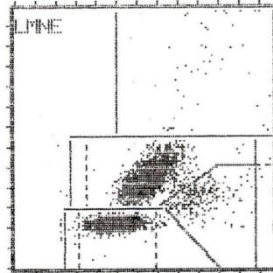
#3 WB

Subject # 3 - Whole Blood

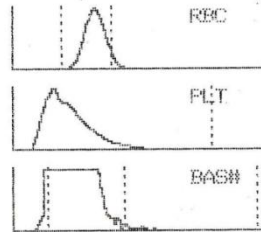
TIME 18:57:5

DATE 12/04/23
SEQ. # 24
ID 3WB

WBC	4.8	$10^3/mm^3$
RBC	4.80	$10^6/mm^3$
HGB	15.4	g/dl
HCT	45.4	%
MCV	95	μm^3
MCH	32.1	pg
MCHC	33.9	g/dl
RDW	11.2	%
PLT	164	$10^3/mm^3$
MPV	8.2	μm^3
PCT	0.134	%
PDW	13.8	%
LYM%	48.2	2.32
MON%	6.2	0.30
NEU%	43.6	2.09
EOS%	1.4	0.07
BAS%	0.6	0.03
ALY%	0.5	0.02
LIC%	0.5	0.02



NEUTROPENIA

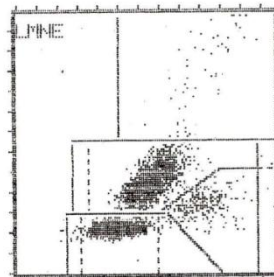


RESULT

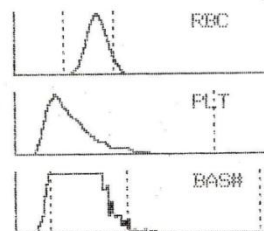
TIME 18:59:01

DATE 12/04/23
SEQ. # 25
ID 2

WBC	4.6	$10^3/mm^3$
RBC	4.83	$10^6/mm^3$
HGB	15.4	g/dl
HCT	45.4	%
MCV	94	μm^3
MCH	31.9	pg
MCHC	33.9	g/dl
RDW	10.9	%
PLT	162	$10^3/mm^3$
MPV	7.9	μm^3
PCT	0.128	%
PDW	13.8	%
LYM%	48.6	2.25
MON%	6.8	0.31
NEU%	42.2	1.95
EOS%	1.5	0.07
BAS%	0.9	0.04
ALY%	0.3	0.02
LIC%	0.7	0.03



NEUTROPENIA



Sheet

RESULT

DATE 12/04/23
 SEQ. # 26
 ID 3 PRP

#3 PRP

TIME 19:18:11

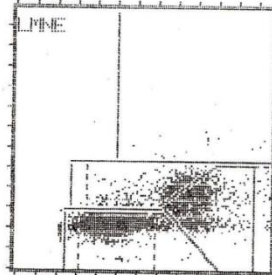
Subject # 3 - PRP

FLAGS WBC:
 LL NL ALY
 RBC: MIC PLT:

WBC	21.1	H	10 ³ /mm ³
RBC	0.14	L	10 ⁶ /mm ³
HGB	0.3	L	g/dl
HCT	0.9	L	%
MCV	60	L	µm ³
MCH	0.0	L	pg
MCHC	0.0	L	g/dl
RDW	7.2	L	%
PLT	1489	H	10 ³ /mm ³
MPV	8.1		µm ³
PCT	1.201	H	%
PDW	14.3		%

LYM%	<u>83.3!</u> H	<u>17.6!</u> H
MON%	<u>9.6!</u>	<u>2.03!</u> H
NEU%	<u>5.7!</u> L	<u>1.20!</u> L
EOS%	<u>0.1!</u>	<u>0.02!</u>
BAS%	1.3	0.27 H

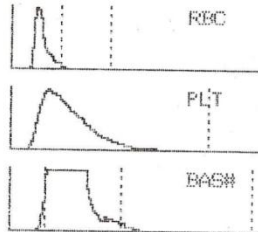
ALY%	<u>1.0!</u>	<u>0.20!</u> h
LIC%	<u>0.7!</u>	<u>0.14!</u>



LEUCOCYTOSIS LYMPHOCYTOSIS
 NEUTROPENIA NRBCS
 MONOCYTOSIS BASOPHILIA

 ANEMIA MICROCYTES++
 MICROCYTOSIS HYPOCHROMIA

 THROMBOCYTOSIS



RESULT

DATE 12/04/23
 SEQ. # 27
 ID 2

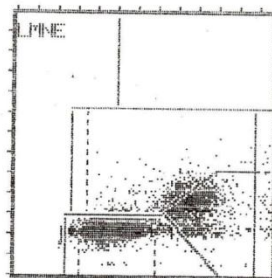
TIME 19:19:29

FLAGS WBC: L1
 LL
 RBC: MIC PLT:

WBC	20.8	!H	10 ³ /mm ³
RBC	0.15	L	10 ⁶ /mm ³
HGB	0.2	L	g/dl
HCT	<u>0.9</u>	!L	%
MCV	<u>58</u>	!L	µm ³
MCH	0.0	L	pg
MCHC	<u>0.0</u>	!L	g/dl
RDW	6.2	L	%
PLT	1521	H	10 ³ /mm ³
MPV	8.1		µm ³
PCT	1.227	H	%
PDW	14.5		%

LYM%	<u>84.5!</u> H	<u>17.6!</u> H
MON%	<u>9.7!</u>	<u>2.01!</u> H
NEU%	<u>4.6!</u> L	<u>0.96!</u> L
EOS%	<u>0.0!</u>	<u>0.00!</u>
BAS%	<u>1.2!</u>	<u>0.25!</u> h

ALY%	<u>0.8!</u>	<u>0.16!</u>
LIC%	<u>0.9!</u>	<u>0.18!</u>



LEUCOCYTOSIS LYMPHOCYTOSIS
 NEUTROPENIA NRBCS
 MONOCYTOSIS

 ANEMIA MICROCYTES++
 MICROCYTOSIS HYPOCHROMIA

 THROMBOCYTOSIS

