



## WORKSHEET

### Special Haemostasis 2010: MARCH DISPATCH

**CLOSING DATE: 22.03.2010**

This worksheet provides your instructions for all components of the March Dispatch. Please read through these notes carefully before reporting your responses on the RESULT SHEET provided with your enrolment package.

Since the introduction of the new report format it is important that all tests (performed in your laboratory) be performed on all specimens even if the initial result is normal. This is required to produce the Youden result plots that require the input of 2 results. If only one result is recorded, instead of two, then the Youden plot cannot be graphed correctly. Please return the RESULT SHEET only, to the RCPA Haematology QAP, by the closing date stated on the cover sheet either by fax or entering on-line.

Listed below are the specimens provided with this dispatch, as well as the test requirements. These requirements will depend on your module description, ie. Module A and/or Module B etc.

MODULE A: *Lupus Anticoagulant exercise*

MODULE B: *Protein C, Protein S, Activated Protein C Resistance and Antithrombin exercise*

MODULE C: *von Willebrand Factor exercise*

MODULE D: *FVIII Inhibitor exercise* **NEW!**

MODULE E: *PFA-100 exercise* **NEW!**

Component	Specimen	Requirement
<b>Module A</b>	LUP10-03a	APTT, APTT ratio, APTTmix, APTTmix ratio, KCT, dRVVT, STACLOT
	LUP10-03b	APTT, APTT ratio, APTTmix, APTTmix ratio, KCT, dRVVT, STACLOT
<b>Module B</b>	THR10-03a	Protein C, Protein S, Antithrombin
	THR10-03b	Protein C, Protein S, Antithrombin
	APC10-03a	APCR
	APC10-03b	APCR
<b>Module C</b>	VW10-03a	VWF:Ag, VWF:RCo, VWF:Act, VWF:CB, FVIII:C
	VW10-03b	VWF:Ag, VWF:RCo, VWF:Act, VWF:CB, FVIII:C
<b>Module D</b> <b>NEW!</b>	INH10-03a	FVIII Inhibitor level ( <b>Plus additional exercise</b> )
	INH10-03b	FVIII Inhibitor level ( <b>Plus additional exercise</b> )
<b>Module E</b> <b>NEW!</b>	PF10-03a	Col/Epi, Col/ADP
	PF10-03b	Col/Epi, Col/ADP

These products have been tested and found non reactive for the presence of hepatitis B surface antigen (HbsAg), human immunodeficiency virus antigen (HIV-1 Ag), antibody to hepatitis C virus (anti-HCV), and antibody to human immunodeficiency virus (anti-HIV-1/HIV-2). Because no known test method can offer complete assurance that infectious agents are absent, consider this product potentially infectious. Follow precautions recommended in current bio safety regulations for potentially infectious specimens when handling or disposing of product.

Quality Assurance samples should be treated in the same manner as routine patient samples.

All the samples provided have been tested and found to be homogeneous and stable for the purpose of these exercises.

**IMPORTANT!!!! WHEN ENTERING ON-LINE REMEMBER TO RECONFIGURE YOUR RESULT SHEET FIRST SO YOU CAN ENTER NEW TEST RESULTS.**

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## Module A

## Lupus Anticoagulant

**Lupus Anticoagulant:** Specimens **LUP10-03a** and **LUP10-03b** (Lyophilised plasma).

LUP10-03a is from a 30 year old female being investigated for recurrent miscarriages.

LUP10-03b is from a 60 year old male being investigated for a previous abnormal haemostasis screen.

Reconstitute lyophilised plasma with **2mL of Distilled H<sub>2</sub>O**. Mix gently and stand at room temperature for approximately 15 min before testing.

**Please perform all tests your laboratory would normally perform for each sample provided.**

**Special Note:** In accordance with the new ISTH SCC LA guidelines\* we have added the APTT normalised ratio and APTTmix normalised ratio to your result sheet. We encourage participants to provide these results even if it is not routine practice in your laboratory.

Use the table below to help with the calculation of results.

Analyte	Test Plasma	Calculation of results	Reporting Units	Interpretation
APTT	Survey sample neat	Not required	Seconds	N = Normal or E = Extended
*APTT ratio	Survey sample neat	$\frac{\text{Test plasma result}}{\text{Neat Normal plasma}}$	Ratio	N = Normal or E = Extended
APTTmix	50% / 50% (survey sample / normal)	Not required	Seconds	N = Normal or E = Extended
*APTTmix ratio	50% / 50% (survey sample / normal)	$\frac{\text{Test plasma result}}{\text{Neat Normal plasma}}$	Ratio	N = Normal or E = Extended
KCT	1 / 5 (1 part:4 parts) (survey sample / normal)	$\frac{\text{Test plasma result}}{\text{Neat Normal plasma}}$	Normalised Ratio	N = Normal or E = Extended
dRVVT screen	50% / 50% (survey sample / normal)	$\frac{\text{Test plasma result}}{\text{Neat Normal plasma}}$	<sup>1</sup> Normalised Ratio	N = Normal or E = Extended
dRVVT confirm	50% / 50% (survey sample / normal)	$\frac{\text{Test plasma result}}{\text{Neat Normal plasma}}$	<sup>2</sup> Normalised Ratio	Not required
dRVVT final ratio	*****	<sup>1</sup> Screen normalised ratio <sup>2</sup> Confirm normalised ratio	Normalised Ratio	N = Normal or E = Extended
STACLOT screen	Survey sample neat	CT1	Seconds	Not required
STACLOT confirm	Survey sample neat	CT2	Seconds	Not required
STACLOT final result	*****	CT1-CT2	Seconds	P = Positive or N = Negative
Final Interpretation	Negative (not LA), Borderline, Weak Positive, Moderate Positive and Strong Positive, Positive			

\*Additional calculated tests.

<sup>1</sup> Screen Normalised Ratio; <sup>2</sup> Confirm Normalised Ratio.

There are many different tests performed for the diagnosis of LA. Unfortunately it is difficult to provide a result sheet that can accommodate all the tests available, so only the more commonly used tests have been included. However, there is an **Additional Test procedures result sheet** provided for extra tests that you may like to include (e.g. platelet neutralisation test).

To help with analysis of results please report your results in the **UNITS** specified on the result sheet or on the on-line data entry page.

**\*Reference:** Pengo V, Tripodi A, Reber G, Rand JH, Ortel TL, Galli M, de Groot PG. Update of the guidelines for lupus anticoagulant detection. J Throm Haemost 2009; 7: 1737-40.

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## ADDITIONAL LUPUS ANTICOAGULANT TEST PROCEDURES

**Lab Name:**

**Participant No:**

*Only submit this sheet if you have additional tests for Module A, such as the "Platelet Neutralisation Procedure". Use the Master copy of the result sheet included in your enrolment package for all other results.*

<b>Specimen *</b>	<b>LUP10- _ _ _ _</b>	<b>LUP10- _ _ _ _</b>	<b>LUP10- _ _ _ _</b>	<b>LUP10- _ _ _ _</b>
<b>Test</b>				
<b>Instrument</b>				
<b>Reagent</b>				
<b>Dilution</b>				
<b>Results**</b>				
<b>Interpretation</b>				
<b>Source of Normal Plasma</b>				
<b>Normal Range</b>				

**\* Complete specimen ID details**

**\*\*Results - please include the units you normally use for reporting your results**

This form is to be used for reporting of additional test procedures not included in your master copy of your result sheet (sent with your enrolment package).

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## Module B

## Protein C, Protein S, APCR and Antithrombin

**Protein C (PC), Protein S (PS), and Antithrombin (AT):** Specimens **THR10-03a** and **THR10-03b** are lyophilised plasma.

**Activated Protein C Resistance (APCR):** Specimens **APC10-03a** and **APC10-03b** are lyophilised plasma.

Reconstitute with **1mL of Distilled H<sub>2</sub>O**. Mix gently and stand at room temperature for approximately 15 min. Perform the tests you would normally perform for Protein C, Protein S, APCR and Antithrombin. Record results (in units requested) on the result sheet or on-line result entry page.

**Please perform all tests your laboratory would normally perform, using each sample provided.**

INTERPRETATION PROTEIN C:            N = *Normal*                            R = *Reduced*

INTERPRETATION PROTEIN S:            N = *Normal*                            R = *Reduced*

INTERPRETATION APCR:                N = *Normal*                            R = *Reduced*

INTERPRETATION ANTITHROMBIN:        N = *Normal*                            R = *Reduced*

**Clinical Information:** Assume specimen THR10-03a is from a 21 year old female patient and specimen THR10-03b from a 40 year old male patient, both being investigated for a thrombophilia disorder.

**Important Note:** When reporting the Activated Protein C Resistance results please record a **Ratio NOT** a **"Normalised Ratio"** for the purpose of statistical analysis.

## Module C

## von Willebrand Factor

**von Willebrand Factor Antigen, Ristocetin Co-factor, von Willebrand Factor Activity, Collagen Binding, Factor VIII:C.**

Specimens **VW10-03a**, **VW10-03b** are lyophilised plasma.

**Please perform all tests your laboratory would normally perform, using each sample provided.**

Reconstitute specimens **VW10-03a** and **VW10-03b** with **0.5mL of Distilled H<sub>2</sub>O**. Stand at room temperature for approximately 15 min and mix gently. Perform the tests you would normally for investigation of von Willebrand Disorder using a plasma sample. Record results (in units requested) on a photocopy of the master result sheet provided with your enrolment package or on-line through the RCPA Haematology website.

Evaluate the results of sample VW10-03a and VW10-03b as if investigating for von Willebrand Disease. Assume VW10-03a is from a 35 year old female and VW10-03b from a 4 year old male.

Please interpret your results by ticking the appropriate space on your result sheet or on-line entry page for each specimen.

**Note:** If your diagnosis does not fit any of the diagnoses provided, then write your interpretation in the space labelled OTHER and fax the result sheet back to the Haematology QAP on +612 9933 0199.

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## Module D

## FVIII Inhibitor (plus Additional exercise)

**FVIII Inhibitor:** Specimens INH10-03a and INH10-03b are lyophilised plasma.

**Additional exercise:** Second set of survey samples INH10-03a and INH10-03b PLUS 2 vials of RCPA supplied lyophilised Pooled Normal Plasma (PNP).

Reconstitute the survey samples (INH10-03a and INH10-03b) with 1mL of Distilled H<sub>2</sub>O. Mix gently and stand at room temperature for approximately 15 min. Perform your routine FVIII Inhibitor assay.\* Record results (in units requested) on the result sheet or on-line result entry page.

INTERPRETATION FVIII Inhibitor:            D = *Detected*                    ND = *Not Detected*

**\*SPECIAL NOTE:** As an additional exercise, in addition to the 2 extra survey samples (INH10-03a and INH10-03b), we have provided each participant with 2 x 3mLs of **lyophilised Pooled Normal Plasma (PNP)** with a FVIII:C level of approximately 100%. Reconstitute each PNP vial with **3mLs of Distilled H<sub>2</sub>O**.

Could all laboratories please perform a FVIII inhibitor assay on both the survey samples INH10-03a and INH10-03b as you would normally do and also repeat the inhibitor testing as you would normally do **except** using the **RCPA QAP provided Pooled Normal Plasma** instead of your usual normal plasma. This additional testing can be done at a different time to the normal survey samples.

A separate result sheet has been included for this additional exercise and we ask that you Fax the results back on +612 9933 0199 as soon as available. We wish to assess whether provision of standard normal pooled plasma reduces the inter-laboratory variation seen in the inhibitor trials. A special report will be issued in due course.

If these instructions are unclear or you have any difficulties in performing this exercise please contact Roslyn Bonar on +612 9933 0114.

## Module E

## PFA-100®

**PFA-100®:** Specimens PF10-03a (4 tubes) and PF10-03b (4 tubes) are sample tubes that may or may not contain a closure time (CT) agonist.

Please read these instructions carefully to familiarise yourself with what is required **before you begin**. We have also provided a PFA 'Worksheet' to enable laboratories to document various test results and/or problems with this survey. This Worksheet should be retained by the laboratory for self-assessment and trouble-shooting purposes, and can also (optionally) be FAXED to the QAP.

### **On the day of testing:**

You will need to collect a minimum of **10ml\*** of blood from a normal non-medicated donor\*\* using your standard sodium citrate anticoagulant (i.e., blue-top coagulation) tubes. Ensure the blood is well mixed after collection by gentle inversion. If available and preferred, this blood (if collected into small collection tubes) can be pooled by gentle pipetting into a single 10-15ml test-tube (NOT provided by QAP) – please cap to prevent changes in pH due to exposure of blood to air.

1. **\*Optional:** You may also collect (i.e., optional) a small volume of blood into an EDTA (purple-top) tube to perform a full blood count. The full blood count data (if performed) may be useful for later internal laboratory review of performance, or in the event that the QAP needs to trouble-shoot problems with this survey. If performed, you can record the main full blood count findings on the attached **PFA Worksheet**.

Laboratories may wish to collect an additional 2-3mLs of citrate anti-coagulated whole blood to be centrifuged and the plasma otherwise processed as you would normally do for von Willebrand Factor (VWF) testing. VWF test results (if performed) may similarly be useful for later internal laboratory review of performance, or in the event that the QAP needs to trouble-shoot problems with this survey. If performed, you can record the main VWF test findings on the attached **PFA Worksheet**.

\*\*Alternatively, the survey can be performed using 10ml whole blood left over from a patient sample previously found to be normal by platelet function/PFA testing, assuming that the use of left over patient samples for quality assurance activities is ethically acceptable at your institution

2. It is important that the donor be medication free, or at least free of recent medication known to influence PFA CTs. The donor blood needs to provide a normal baseline CT (for both C/Epi and C/ADP) for this survey. At a minimum, please exclude recent aspirin or other non-steroidal anti-inflammatory medication, or other medication known to affect platelet function, for the past week.
3. Turn on the PFA instrument some 15 min prior to starting testing.

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4. Ensure there is sufficient PFA Trigger Solution in place, and that the system is appropriately primed. Ensure you have sufficient numbers of a **single lot** of C/Epi and C/ADP test cartridges. Bring these to room temperature and document lot numbers and expiry date details on the attached **PFA Worksheet**.

## TEST INSTRUCTIONS: (refer to attached flowchart for summary):

5. **Important:** The collected normal citrate-anticoagulated whole blood should be placed on a roller tube system if available or otherwise laid flat and mixed by gentle inversion **before each sampling and testing**.
6. Perform a PFA-100 test as per your usual procedure on the native whole blood once using the C/ADP cartridge and once using the C/Epi cartridge. Avoid introducing air bubbles into the blood and into the PFA-100 test system. Run samples by pressing the run button. Ensure that both test results are within normal range. If any result is not within the normal range, or if an error code is obtained, the test should be repeated for that cartridge. If the repeat result is still not within the normal range, or if an error code is again obtained, the sample may not be suitable for this survey. You may contact the QAP for advice, or collect another donor and start again. If the test results are within the normal range, document these results on the QAP provided result sheet. These results provide the baseline survey test results.
7. Pipette 1.0ml of pre-mixed native whole blood to one RCPA QAP survey tube PF10-03a and another 1.0ml blood to a second survey tube PF10-03a. Cap the survey tubes, mix by gentle inversion and place on a roller mixer. Leave these tubes to incubate at room temperature for a minimum of **15min**, and a maximum of **30min**. If a roller mixer is not available, lay tubes flat and remix blood by gentle inversion every 5min.
8. Mix the sample tubes by gentle inversion just prior to testing. Load fresh C/Epi and C/ADP test cartridges onto the PFA-100. Test each of the incubated whole blood samples as per your usual procedure once using the C/ADP cartridge and once using the C/Epi cartridge. Avoid introducing air bubbles into the blood and into the PFA-100 test system. Run samples by pressing the run button.
9. **Repeat steps 7 and 8 for survey sample PF10-03b.**

## RESULTS REVIEW:

10. Any test result identified with an error code 'B' (Air Leak) should automatically be considered as a 'test failure' and therefore repeated using steps 7 and 8. Any test result identified with an error code 'C' (Flow Obstruction) that occurs with a CT <250 sec should also be considered a 'test failure' and therefore repeated using steps 7 and 8. The RCPA QAP has provided each laboratory with a spare set of survey sample tubes for such purpose. Test results identified with an error code 'C' (Flow Obstruction) that occurs with a CT ≥250 sec, or 'A' (Maximum Test Time Exceeded), or 'D' (Insufficient Sample), or 'E' (Maximum Syringe Travel Reached) **should not** be treated as test failures, but rather identified as a maximal closure time for that test sample. If in doubt, contact the QAP for advice.
11. **Review all your test results.** Once you are satisfied that you have obtained a normal baseline CT result for both C/ADP and C/Epi on the donor whole blood, and have also obtained **valid** test results for both C/ADP and C/Epi using both RCPA QAP challenge tubes that are not error coded with an 'B' (Air Leak), or 'C' (Flow Obstruction) for CT<250sec, the survey can be considered as completed. Please note, survey challenge tubes may or may not contain a CT antagonist, so **valid** CT results with these tubes may or may not be abnormal.
12. **Optional:** Once the survey has been completed: (a) If desired, laboratories can centrifuge any remaining whole blood and separate and freeze the plasma for VWF testing (as per optional step in step 1). (b) Alternatively, if desired, laboratories can repeat baseline CT tests, or repeat RCPA QAP (PF10-03a and PF10-03b) challenges, using any remaining whole blood and challenge tubes. Alternatively, any remaining RCPA QAP (PF10-03a and PF10-03b) challenge tubes should be stored (refrigerated), and may be useful for later internal laboratory review of performance, or for trouble-shooting problems with this survey.
13. Please record your **final results\*\*\*** on the result sheet provided in your enrolment package or enter directly on-line via the RCPA Haematology QAP website. Use the attached worksheet for additional internal use in the event that the QAP needs to trouble-shoot problems with this survey.

\*\*\* Please record Baseline CT data. This baseline data should be normal. Only document a Baseline CT result as 'Abnormal' or 'Test Failure' if repeated testing and/or donor collections has failed to provide a suitable sample and you have decided to abandon testing. In this case, you should also document reasons for this failure on your Worksheet in case this is required for review.

Please also record CT data obtained using RCPA QAP (PF10-03a and PF10-03b) challenges. Please select Normal or Abnormal according to the normal reference range in use in your laboratory. Only document a CT result as a 'Test Failure' if repeated testing continues to provide a test result that you believe to be a failed test.

Review the overall test patterns for each challenge tube and attempt to interpret these findings.

**Please fax all results back to the QAP +612 9933 0199 before the closing date, even if results have been entered on line for the first survey.**

**NOTE: CT test data should be reported as whole numbers and include the '>' operand if this operand is included in the PFA CT result provided by the instrument for that sample.**

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## PFA-100® Additional Worksheet

Participant No:

Use this Worksheet page for documenting problems and additional test results for this survey and retain for your records. This page can optionally be FAXED back to the RCPA Haematology QAP on +612 9933 0199 (note: this is NOT MANDATORY, but may assist the QAP to trouble shoot problems with this survey and help improve future surveys). Remember to include your participant number if faxing back additional test results.

Additional data capture:

**A. PFA-100 test cartridge details:**

	C/Epi	C/ADP
Lot number:		
Expiry date:		

**B. Baseline results for donor native blood:**

Test Parameter:	Units:	Your normal range:	Sample's test result:
Platelet count:	$\times 10^9/L$		
Haematocrit			
VWF:Ag	%		
VWF:CB	%		
VWF:RCo	%		
VWF:Activity	%		
FVIII:C	%		

**C. Repeated test results or problems with survey challenges:**

	C/Epi	C/ADP	Comments
Baseline (Run 1)			
Baseline Rpt (if performed)			
Baseline (as reported to QAP)			
PF10-03a (Run 1)			
PF10-03a Rpt (if performed)			
PF10-03a (as reported to QAP)			
PF10-03b (Run 1)			
PF10-03b (Rpt [if performed])			
PF10-03b (as reported to QAP)			

**D. Additional comments regarding the PFA-100 survey:**

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Participant No:

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## *PFA-100® Test Code Table*

TEST CODES	IDENTIFIES	INTERPRETATION
A	Maximum Test Time Exceeded	Maximum CT obtainable with sample (not a TF)
B	Air Leak	Test Failure
C	Flow Obstruction	TF if CT <250s; Maximum CT obtainable with sample if CT ≥250s
D	Insufficient Sample	Maximum CT obtainable with sample (not a TF) if ≥0.8ml blood has been used for test.
E	Maximum Syringe Travel Reached	Maximum CT obtainable with sample (not a TF)
NA	Not Applicable	Not Applicable

**Note:** TF = Test Failure; CT = Closure Time.

### **IMPORTANT NOTE:**

- *Please enter the test codes on your results sheet in the space provided.*
- *If no test codes appear then leave this space blank.*
- *The reported test codes will help in the final analysis of the performance of the samples and PFA-100® instruments.*

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Please check carefully the specimen reconstitution volumes below as they vary with each module.

## SUMMARY OF SPECIMEN INFORMATION

### Module A

Specimen	Reconstitution	Test	Interpretation
LUP10-03a	2mL distilled H <sub>2</sub> O	APTT, APTT ratio, APTTmix, APTTmix ratio, KCT, dRVVT STACLOT	APTT = N / E KCT = N / E dRVVT = N / E STACLOT = Negative / Positive
LUP10-03b	2mL distilled H <sub>2</sub> O	APTT, APTT ratio, APTTmix, APTTmix ratio, KCT, dRVVT STACLOT	APTT = N / E KCT = N / E dRVVT = N / E STACLOT = Negative / Positive

### Module B

THR10-03a	1mL distilled H <sub>2</sub> O	Protein C, Protein S, Antithrombin	PC, PS, AT = N / R
THR10-03b	1mL distilled H <sub>2</sub> O	Protein C, Protein S, Antithrombin	PC, PS, AT = N / R
APC10-03a	1mL distilled H <sub>2</sub> O	APCR	APCR = N / R
APC10-03b	1mL distilled H <sub>2</sub> O	APCR	APCR = N / R

### Module C

VW10-03a	0.5mL distilled H <sub>2</sub> O	VWF:Ag, VWF:RCo, VWF:Activity, VWF:CB, FVIII:C	Interpretation
VW10-03b	0.5mL distilled H <sub>2</sub> O	VWF:Ag, VWF:RCo, VWF:Activity, VWF:CB, FVIII:C	Interpretation

### Module D

INH10-03a	1mL distilled H <sub>2</sub> O	FVIII Inhibitor level	D=Detected, ND=Not Detected
INH10-03b	1mL distilled H <sub>2</sub> O	FVIII Inhibitor level	D=Detected, ND=Not Detected
QAP supplied PNP	3mL distilled H <sub>2</sub> O	FVIII Inhibitor level	D=Detected, ND=Not Detected

### Module E

PF10-03a	1mL Normal citrated blood (not included)	Col/Epi, Col/ADP	Col/ADP=Normal/Abnormal/Test Failure Col/Epi=Normal/Abnormal/Test Failure
PF10-03b	1mL Normal citrated blood (not included)	Col/Epi, Col/ADP	Col/ADP=Normal/Abnormal/Test Failure Col/Epi=Normal/Abnormal/Test Failure

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### Abbreviations used throughout the DISPATCH worksheet & result sheet

ABBREVIATION	FULL TEST NAME	UNITS
APTT	Activated partial thromboplastin time	sec
APTTmix	Activated partial thromboplastin time (50/50 survey sample+normal plasma)	sec
KCT	Kaolin clotting time (1/5 mix)	Ratio
dRVVT	Dilute Russell's Viper Venom test (1/1mix)	
dRVVTs	Dilute Russell's Viper Venom time – screening test normalised ratio	Ratio
dRVVTc	Dilute Russell's Viper Venom time – confirmatory test normalised ratio	Ratio
F-RAT	Normalised final ratio	Ratio
PC	Protein C	%
PS	Protein S	%
APCR (APTT)	Activated Protein C Resistance (APTT)	
APCR (APTT-V)	Activated Protein C Resistance (APTT <b>with</b> FV deficient plasma)	Ratio
APCR (RVVT)	Activated Protein C Resistance (Russell's Viper Venom time)	Ratio
APCR (RVVT-V)	Activated Protein C Resistance (Russell's Viper Venom time <b>with</b> FV deficient plasma)	Ratio
AT	Antithrombin	%
VWF:Ag	von Willebrand Factor Antigen	%
VWF:Rco	von Willebrand Factor Ristocetin Co-factor	%
VWF:Activity	von Willebrand Factor Activity assay	%
VWF:CB	von Willebrand Factor Collagen Binding Activity	%
CB/Ag	VWF Collagen Binding to VWF Antigen ratio	Ratio
Rco/Ag	VWF Ristocetin Co-factor to VWF Antigen ratio	Ratio
Activity/Ag	VWF Activity to VWF Antigen ratio	Ratio
VWF:Mult	von Willebrand Factor Multimer	
FVIII:C	Factor VIII coagulant	%
VWD	von Willebrand Disorder	
LIA	Latex immunoassay	
ELISA	Enzyme-linked immunosorbant assay	
PFA-100®	Platelet Function Analyser	
CT	Closure Time	sec
TF	Test Failure	
C/ADP	Collagen/ADP cartridge	
C/Epi	Collagen/Epinephrine cartridge	
BU	Bethesda Units	
PNP	Pooled Normal Plasma	