



AUTOMATED DIFFERENTIAL WORKSHEET 2010

The samples have been tested and found to be homogeneous and stable for the purpose of these exercises. These whole blood reagents may contain any or all of the following: stabilised human or mammalian red blood cells, human, mammalian or simulated white blood cells and a platelet component in a preservative medium.

MARCH	Cycle 10 Run 1	AD1	AD10-1-03a	WCC, Neut/Gran, Lymp, Mono, Eos, Baso
			AD10-1-03b	WCC, Neut/Gran, Lymp, Mono, Eos, Baso
		AD2	AD10-2-03a	WCC, Neut/Gran, Lymp, Mono, Eos, Baso
			AD10-2-03b	WCC, Neut/Gran, Lymp, Mono, Eos, Baso
		AD3	AD10-3-03a	WCC, Neut/Gran, Lymp, Mono, Eos, Baso
			AD10-3-03b	WCC, Neut/Gran, Lymp, Mono, Eos, Baso
		AD4	AD10-4-03a	WCC, Neut/Gran, Lymp, Mono, Eos, Baso, LUC
			AD10-4-03b	WCC, Neut/Gran, Lymp, Mono, Eos, Baso, LUC
		AD5	AD10-5-03a	WCC, Neut/Gran, Lymp, Mixed
			AD10-5-03b	WCC, Neut/Gran, Lymp, Mixed
		AD6	AD10-6-03a	WCC, Neut/Gran, Lymp, Mono/Mid
			AD10-6-03b	WCC, Neut/Gran, Lymp, Mono/Mid
		AD7	AD10-7-03a	WCC, Neut/Gran, Lymp, Mono, Eos, Baso
			AD10-7-03b	WCC, Neut/Gran, Lymp, Mono, Eos, Baso
		AD8	AD10-8-03a	WCC, Neut/Gran, Lymp, Mono, Eos, Baso
			AD10-8-03b	WCC, Neut/Gran, Lymp, Mono, Eos, Baso

SEPTEMBER	Cycle 10 Run 2	AD1	AD10-1-10a	WCC, Neut/Gran, Lymp, Mono, Eos, Baso
			AD10-1-10b	WCC, Neut/Gran, Lymp, Mono, Eos, Baso
		AD2	AD10-2-10a	WCC, Neut/Gran, Lymp, Mono, Eos, Baso
			AD10-2-10b	WCC, Neut/Gran, Lymp, Mono, Eos, Baso
		AD3	AD10-3-10a	WCC, Neut/Gran, Lymp, Mono, Eos, Baso
			AD10-3-10b	WCC, Neut/Gran, Lymp, Mono, Eos, Baso
		AD4	AD10-4-10a	WCC, Neut/Gran, Lymp, Mono, Eos, Baso, LUC
			AD10-4-10b	WCC, Neut/Gran, Lymp, Mono, Eos, Baso, LUC
		AD5	AD10-5-10a	WCC, Neut/Gran, Lymp, Mixed
			AD10-5-10b	WCC, Neut/Gran, Lymp, Mixed
		AD6	AD10-6-10a	WCC, Neut/Gran, Lymp, Mono/Mid
			AD10-6-10b	WCC, Neut/Gran, Lymp, Mono/Mid
		AD7	AD10-7-10a	WCC, Neut/Gran, Lymp, Mono, Eos, Baso
			AD10-7-10b	WCC, Neut/Gran, Lymp, Mono, Eos, Baso
		AD8	AD10-8-10a	WCC, Neut/Gran, Lymp, Mono, Eos, Baso
			AD10-8-10b	WCC, Neut/Gran, Lymp, Mono, Eos, Baso

Module	Instrument Group
AD1	SYSMEX XT1800i, XT2000i, XE2100/5000, XS1000i, XS800i
AD2	ABBOTT Cell-Dyn 3000, 3200/Ruby, 3500, 3700, 4000/Sapphire
AD3	BECKMAN COULTER ACT5Diff, ABX Pentra 60 C, Pentra DX 120
AD4	SIEMENS ADVIA 120/2120, TECHNICON H Systems
AD5	SYSMEX K-1000, KX-21, K-4500, poch-100
AD6	ABBOTT Cell-Dyn 1200,1300, 1400, 1600, 1700, 1800 BECKMAN COULTER ACT/ACT Diff, T Series, JT Series, JS, JR, ST, ONYX, MD Series. ABX MICROS 60, Spirit (MINOS), ABX ARGOS NIHON KOHDEN Celltac SIEMENS ADVIA 60, ADVIA 70
AD7	BECKMAN COULTER STKS, MAXM, HmX, GEN.S, LH 750/755/780, LH500
AD8	SYSMEX SE9500, SE9000, SF3000

GENERAL INFORMATION

SAMPLE	Volume Provided	Test	Interpretation	Units
AD10 - # -**a / b	2.0-4.5 ml	White Cell Count	Not Required	X 10 ⁹ /L
# = Module ** = Sample Number		Autodifferential Parameters as stated on Page 1	Not Required	Percentage (%)

ATTENTION! IT IS CRUCIAL THAT YOU READ THESE INSTRUCTIONS CAREFULLY AND PROCESS YOUR SAMPLES EXACTLY AS INSTRUCTED.

You should receive the samples which correspond to the Automated Differential module/modules in which you are enrolled. **Samples are instrument specific.**

Please check that your samples correspond to your instrumentation by referring to the table on Page 1 or the METHOD CLASSIFICATION BOOKLET available on the Haematology QAP website. If you have changed your instrumentation and you require a different automated differential material, **you must contact the HAEMATOLOGY QAP immediately.**

It is recommended that these samples be submitted through properly maintained and calibrated instruments.

The **INSTRUCTIONS FOR USE** are printed in these worksheets, as well as on the back of the result sheets included in your enrolment pack. Some modules have instructions that are instrument specific so if your laboratory is enrolled in more than one module please ensure you carefully read all instructions before proceeding. All MASTER RESULT SHEETS and INSTRUCTIONS FOR USE are available on the Haematology QAP website:

<http://www.rcpaqap.com.au/haematology/>

SAMPLE HANDLING AND PROCESSING INSTRUCTIONS

Modules AD2, AD4, AD5, AD6, and AD7: The manufacturer of the control material has advised that these samples must be handled exactly as described, otherwise incorrect results may be produced.

- Remove the vials of control from the refrigerator and warm to room temperature (18°C to 30°C) for 15 minutes before use.
- To mix (Do not mix mechanically).
 - Hold the vial horizontally between the palms of the hands and roll the vial back and forth for 20 to 30 seconds. Do not shake.
 - Mix by rapid inversion until all cells are resuspended.
 - Vials stored for an extended period of time may need extra mixing.
 - Gently invert the vial 8 to 10 times immediately before sampling.
 - Refer to the instrument manual for the system in use for analysing control material.
- After sampling, return to refrigeration for maximum open-vial stability. If run in the open mode, wipe the threads of both the vial and cap before replacing the cap and returning to refrigeration.

Module AD1: Instructions for the XT, XE and XS Series of the Sysmex 5-part differential instruments are included. This sample **MUST BE PROCESSED THROUGH THE QC MODE OF THE INSTRUMENT** otherwise incorrect results/"vote-outs" may occur.

XE SERIES

The specimens need to be run into one of the Manual E-Check QC files – for example Level 2 Manual. The results are then deleted from the QC files and printed from the Explorer screen. See Operators Manual Chapter 2, Section 3.3.1.

- Allow tubes to warm to Room Temperature for 15 mins before mixing.
- Press "QC" on the main screen
- Press "Exec QC" on the QC menu.
- Select one of the manual mode E-Check files – for example "Level 2 Manual". (Do not use one of the "Other" files).
- Press "Select".
- Mix the vial by end-to-end inversion until all red blood cells are completely resuspended. Gently invert the vial 8-10 times immediately before sampling.
- Aspirate sample.
- Press "Cancel" – Results do not have to be accepted.
- Repeat for the next tube.
- Go to "Explorer" and select the RCPA results.
- (You may change the ID of the QC specimens that you have just run from "QC-lot number" to an RCPA ID)
- Print the results
- Delete results from the QC file that have been accepted.

XT SERIES

The specimens need to be run into one of the Manual E-Check QC files – for example Level 2 Manual. The results are then printed from the Explorer screen. See Operators Manual Chapter 6, Section 3.1.

- Allow tubes to warm to Room Temperature for 15 mins before mixing.
- Go to "QC Analysis" on the main menu.
- (If "QC Analysis" is not visible on the main menu then go to "Controller" then "QC Analysis").
- Select a manual E-Check QC file – for example "Level 2 Manual". (Do not select one of the "Other files").
- Mix the vial by end-to-end inversion until all red blood cells are completely resuspended. Gently invert the vial 8-10 times immediately before sampling.
- Aspirate sample.
- Press "Cancel" – Results do not have to be accepted.
- Repeat for the next tube
- Go to "Explorer" and select the RCPA results.
- (You may change the ID of the QC specimens that you have just run from "QC-lot number" to an RCPA ID)
- Print the results.
- Delete any RCPA results from the QC file that have been accepted.

XS SERIES

The specimens need to be run into one of the Manual QC files – for example Level 2 Manual. The results are then printed from the Explorer screen. See Operators Manual Chapter 6, Section 3.1.

- Allow tubes to warm to Room Temperature for 15 minutes before mixing.
- Mix the vial by end-to-end inversion until all red blood cells are completely resuspended. Gently invert the vial 8-10 times immediately before sampling.
- Aspirate sample.
- Go to "QC Files".
- Select "Manual Mode" Icon.
- Select "Level 2 QC".
- Press "OK".
- Run RCPA samples in "Level 2".
- When the results fill the accept screen – press "Cancel".
- Go to the "Explorer" screen and print results.
- (Edit the ID if you need to).










Module AD3: Instructions for the AL, CP and OV models of the Beckman Coulter ACT 5 Diff, are included. ABX Pentra 60 C+ users must refer to their manual for instructions on analysing control materials. This sample **MUST BE PROCESSED THROUGH THE QC MODE OF THESE INSTRUMENTS** otherwise incorrect results/"vote-outs" may occur.

AD3 SAMPLE HANDLING INSTRUCTIONS

These instructions were obtained directly from the manufacturer of the control material.

1. Remove a vial of control from the refrigerator and warm to room temperature (18° to 30°C) for 15 minutes before use.
2. To mix, hold the vial between the palms of the hands. **Do not mix mechanically.**
 - Roll the vial back and forth for 20 to 30 seconds occasionally inverting the vial. Mix vigorously. **Do not shake.**
 - Continue to mix in this manner until all the cells are resuspended. Vials stored for an extended period of time may need extra mixing.
 - Gently invert the vials 8 to 10 times immediately before sampling.
3. Refer to the instrument manual for the system in use for analysing control materials. **AD3 must be run in the QC mode.**
4. After sampling, return to refrigeration for maximum open-vial stability. If run in the open mode, wipe the threads of both the vial and cap before replacing the cap and returning to refrigeration.

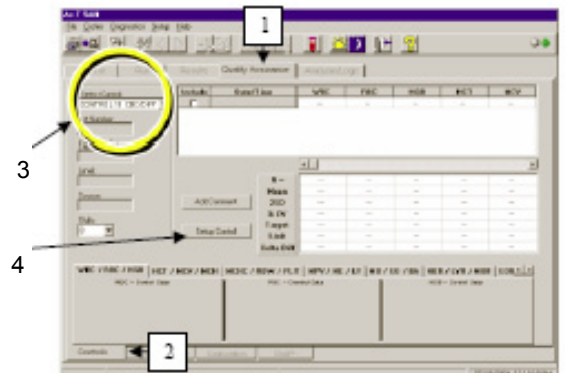
PROCEDURE FOR RUNNING RCPA QAP DIFFERENTIAL CONTROL SAMPLES ON THE BECKMAN COULTER ACT5DIFF™ AL ANALYSER

1. From the main menu screen click on 
2. Then click on 
3. If the Levey-Jennings graphs screen appears, click on  to open the QC data grid screen.
4. At the Control Name field, select a CBC/diff control file (from the drop down box) that is currently not used eg CONTROL 24. Note: only files 13 to 24 will provide differential results.
5. Click on . N.b. there is no need to enter targets or ranges.
6. Move your cursor to the Lot Number field. Enter "**RCPA.QAP**" as your lot number
7. Make sure the reserved box is ticked Reserved 
8. Move your cursor to the Expiration date field and select an expiry date (could be the closing date or a date well into the future) ____
9. Click on  to save the file setup.
10. Follow the instructions for handling and preparing your RCPA samples.
11. Run your "a" samples into this file in either manual or automatic mode using the "**RCPA.QAP**" reserved id.
12. Add the "a" sample id as a comment to the result via the graphics screen by clicking on the  icon and saving it with 
13. If Autoprint is not activated, manually print your result by clicking the  icon and following the prompts.
14. Run your "b" sample into this file also.
15. Add the "b" sample id as a comment to the result as above.
16. If Autoprint is not activated, manually print your result as above.

17. From your print out (or screen), you can now record your differential results (ie. Not absolute count) onto your survey results sheet including the high basophil percentage. You may save this file for future processing of RCPA differential samples from step 10 onwards. If so, you may need to adjust the expiration date next time you use the file.

**PROCEDURE FOR RUNNING RCPA QAP DIFFERENTIAL CONTROL SAMPLES ON THE
BECKMAN COULTER ACT5DIFF™ CP ANALYSER**

1. From the main screen, click on the **Quality Assurance** Tab.
2. Click the **Controls** tab at the bottom of the window.
3. At the Select Control field, select a CBC/diff control file (from the drop down box) that is currently not used eg CONTROL 24. Note: only files 13 to 24 will provide differential results.
4. Click on the **Setup Control** box.
5. Enter "RCPA-QAP" in the lot number field.
6. Press tab to move to the next field.
7. At the expiration date field, enter an expiry date for the control (could be the closing date or a date well in to the future).
8. Press tab to move to the next field.
9. At the Source field, select the source of the material as "Commercial" from the drop down box.
10. Press tab to move to the next field.



11. At the Level field, select the level "Normal".
12. *N.b. You do not need to enter any target values or ranges to now use this file.*
13. Click on the green tick icon to save and exit the setup screen.
14. Follow the instructions for handling and preparing your RCPA samples.
15. Sample your first sample (the "a" sample) into this file by staying in this screen.
16. When the result appears in the top row, click on that row to highlight it then click on the box..
17. Enter the "a" sample RCPA id into the comments field.
18. Sample your second sample (the "b" sample) also into this file.
19. When the result appears in the top row, click on that row to highlight it then click on the **Add Comment** box and enter the "b" sample id.
20. Click on your print icon (top left hand corner of the screen) and select "Print all rows" and the green check icon.
21. From your print out, you can now record your differential results (ie. Not absolute count) onto your survey results sheet including the high basophil percentage. You may save this file for future processing of RCPA differential samples from step 14 onwards. If so, you may need to adjust the expiration date next time you use the file.

Samples processed on the Act 5 Diff "OV" model must be processed as a PATIENT SAMPLE as there is no QC mode on this analyser.

Samples processed on the ABX Pentra 60C+ MUST be run through QC mode.

Module AD8: This sample **MUST BE PROCESSED THROUGH THE QC MODE OF THE INSTRUMENT** otherwise incorrect results/"vote-outs" may occur.

SE SERIES

The specimens need to be run using the "Manual (OPEN) Mode", into one of the QC files. See Operator's Manual Chapter 6, Section 11.3.

- Allow tubes to warm to Room Temperature for 15 mins before mixing.
- Press F4 to select "F4:QC".
- From the sub menu, select "2.Execute X/L-J".
- Select "1:File".
- Input the appropriate QC file number, for example one that you are not using (not files 13 – 15).
- Mix the vial by end-to-end inversion until all red blood cells are completely resuspended. Gently invert the vial 8-10 times immediately before sampling.
- Aspirate sample.
- Press "F3, QC Data".
- Mark appropriate data.
- Press F9 and print marked data using either GP or LP.
- Delete marked data as necessary.

SF SERIES

The specimens need to be run using the "Manual (OPEN) Mode", into one of the QC files. See Operator's Manual Chapter 3, Section 3.1.

- Allow tubes to warm to Room Temperature for 15 mins before mixing.
- Press "Next No." keypad in the top line of the LCD screen.
- Select an appropriate QC file (one that is not in use).
- Press "Enter".
- Mix the vial by end-to-end inversion until all red blood cells are completely resuspended. Gently invert the vial 8-10 times immediately before sampling.
- Aspirate sample.
- Go to Stored Data, List Display and Print the results in the normal manner.
- Delete results as appropriate.

INSTRUCTIONS FOR PARTICIPANTS WITH MULTIPLE INSTRUMENTS

If your laboratory has multiple instruments which are all using material from the same module the easiest method is to record instrument numbers in the same order as the Full Blood Count (FB) Program.

- Example:

FB Program Number	Instrument	AD Module	Instrument No. for that Module	AD Module Number
999.1	Sysmex XE	AD1	1	999.1
999.2	Sysmex XE	AD1	2	999.2
999.3	Sysmex XT	AD1	3	999.3

All instruments belong to Module AD1 so the results can be recorded as above which corresponds to the order of the instruments in the FB Program.

If your laboratory has multiple instruments which belong to different Automated Differential modules the instrument numbers for the Automated Differential will not correspond to the instrument numbers in the FB Program.

- Example:

FB Program Number	Instrument	AD Module	Instrument No. for that Module	AD Module Number
999.1	Sysmex XE	AD1	1	999.1
999.2	Sysmex XE	AD1	2	999.2
999.3	Sysmex K1000	AD5	1	999.1
999.4	Sysmex XT	AD1	3	999.3
999.5	LH750	AD7	1	999.1

This laboratory has multiple instruments which requires enrolment in 3 different Automated Differential modules – AD1, AD5 and AD7. Whilst in the FB Program these instruments are simply numbered 999.1 to 999.5 this is not possible in the Automated Differential Program.

Instruments in the same module are numbered sequentially but if you then change to another module the instrument number reverts back to xxx.1

If your laboratory has more than one instrument of the same model (eg in this case 2 Sysmex XE instruments) it is the participants responsibility to be consistent in the submission of results. For example Sysmex XE instrument 1 needs to remain the same instrument throughout the cycle for the statistics to be meaningful.

- **THE PERCENTAGE VALUE, NOT THE ABSOLUTE COUNT, MUST BE REPORTED.** For past surveys, courtesy calls were made to participants to resubmit correctly expressed results. No more calls will be made, and results expressed incorrectly will not be accepted.