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Proficiency Crossmatch program BPT07/22

Date issued: 06 July 2022
Date due: 20 July 2022
Report issued: 21 July 2022

BPT 07/2022 was manufactured on 27 June 2022 using 4 units of BPOS units as the patient cells and Compatible donor cells. Three units of ABPOS packed red cells were used for the Incompatible donor cells. Seven units of BPOS plasma obtained from the plasma department was used as patient serum. ABO and RH test was performed on all the units using automated and manual tube test methods on the 27 June 2022 and the ABO and Rh results obtained corresponded with the ABO and RH group on Meditech. The plasma was pooled, and decalcified on the 29 June 2022, the ABO/RH groups were performed and corresponded. Red cells were pooled and washed with preserving fluid (batch 21011; expiry 15.12.2022). The ABO and RH groups were confirmed and corresponded.

The Crossmatch was performed on by 27 June 2022 by tube technique and 4+ reaction was obtained using manual methods. All test was performed according to SOP-QCL-001 using saline and IAT methods. Reagents were controlled and met requirements.

Table 1: Raw Material results

	AUTOMATION									
	Anti-A	Anti-B	Anti-A,B	Anti-D	A1 cells	A2 Cells	Bcells	Blood Group	Saline crossmatch	IAT crossmatch
Patient	0	4	4	4	4	4	0	Bpos		
Negative donor	0	4	4	4	4	4	0	Bpos	N/A	0
Positive donor	4	4	4	4	0	0	0	ABPOS	N/A	1+
	Manual									
Patient	0	4	4	4	4		0	Bpos		
Negative donor	0	4	4	4	4		0	Bpos	0	0
Positive donor	4	4	4	4	0		0	ABpos	4	4

Table 2: Issue Day testing results

	AUTOMATION									
	Anti-A	Anti-B	Anti-A,B	Anti-D	A1 cells	A2 Cells	Bcells	Blood Group	Saline crossmatch	IAT crossmatch
Patient	0	4	4	4	4	4	0	Bpos		
Negative donor	0	4	4	4	4	4	0	Bpos	N/A	0
Positive donor	4	4	4	4	0	0	0	ABPOS	N/A	1+
	Manual									
Patient	0	4	4	4	4		0	Bpos		
Negative donor	0	4	4	4	4		0	Bpos	0	0
Positive donor	4	4	4	4	0		0	ABpos	0	1+

Table 3: 5 Day testing results

	AUTOMATION									
	Anti-A	Anti-B	Anti-A,B	Anti-D	A1 cells	A2 Cells	Bcells	Blood Group	Saline crossmatch	IAT crossmatch
Patient	0	4	4	4	4	4	0	Bpos		
Negative donor	0	4	4	4	4	4	0	Bpos	N/A	0
Positive donor	4	4	4	4	0	0	0	ABPOS	N/A	1+
	Manual									
Patient	0	4	4	4	4		0	Bpos		
Negative donor	0	4	4	4	4		0	Bpos	0	0
Positive donor	4	4	4	4	0		0	ABpos	0	1+

Table4: Final day testing results

	AUTOMATION									
	Anti-A	Anti-B	Anti-A,B	Anti-D	A1 cells	A2 Cells	Bcells	Blood Group	Saline crossmatch	IAT crossmatch
Patient	0	4	4	4	4	4	0	Bpos		
Negative donor	0	4	4	4	4	4	0	Bpos	N/A	0
Positive donor	4	4	4	4	0	0	0	ABPOS	N/A	1+
	Manual									
Patient	0	4	4	4	4		0	Bpos		
Negative donor	0	4	4	4	4		0	Bpos	0	0
Positive donor	4	4	4	4	0		0	ABpos	0	1+

Table 5: Summary report

Batch BPT07/22 - Crossmatch

Sets in Batch	312
Sets Sent to Institution	312
Completed Sets	268
Outstanding Sets	15
Untestable Sets	29
Untestable Samples	57
Multiple Results Submitted for a Single Set	7
Number of Passes	248
Number of Failures	20
Percentage Passes	92.54%
Average Score	95.46%

Eleven out of the twenty participants that failed, they all found the ABPOS donor units to be compatible with the BPOS patient.
One participant found all units compatible and only performed crossmatch without ABO typing the donor units.
The rest of the failures were not related to ABO incompatibility

The following was done to establish cause of the 1+ reaction obtained for ABO incompatibility:

1. Testing performed by SLS laboratory on 08/07/2022 using the Erythra instrument obtained a 1+ incompatibility in IAT for the ABPos units
2. All sterility and environmental tests are negative
3. The BPOS patient plasma used was tested against reagent AB cells and a 4+ incompatibility was found.
4. Patient plasma was tested against A2 cells manually on the 29/08/2022 and 4+ was obtained.
5. The antibody titre using A1cells was 1:64 and 1:8 using A2 cells.

Conclusion:
ABPos units are incompatible with BPOS patient, and a 1+ IAT results should've been obtained.

PT material stable and obtained the expected results post the due date as indicated in additional testing that was performed

Recommendation:
Table 6 extracted form SANBS document provides a guideline for selection of blood and excludes the use of AB units for blood group B patients.

Table 6 Blood selection (SANBS, INF-ISS-020, Selection of blood and blood products guideline)

Patient's ABO Group & Rh type	Donor Blood: Order of Choice (Left to Right)					
A	A	Weak A	O L			
Weak A	Weak A	O L				
B	B	O L				
Weak B	Weak B	O L				
AB	AB	Weak AB	Weak A	A L	B L	O L
Weak AB	Weak AB	Weak A	B L	O L		
A Weak B	A Weak B	Weak B	A L	O L		
O	O					
Inconclusive	O L					
Rh Pos	Rh Pos	Rh Neg				
Rh Neg	Rh Neg					
Weak D	Rh Neg					

The participants that found the incompatible units compatible must perform corrective action according to their institution's procedures

Regards

Truscha Niekerk
Scheme Manager

Supported by PAC (Yes- Incompatible units were found compatible)