Sutter Health
Sutter Roseville Medical Center

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Owner:	*Irene Wittkop: Coord, Transfusion Service*
Policy Area:	*Lab - Transfusion Service*
References:	
Applicability:	*Sutter Roseville Medical Center*

Performing an ABO Blood Group by Tube Method

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Purpose	This procedure describes how to perform an ABO blood group using tube methodology.
Policy	• An ABO Group and Rh type must be performed on each TS, INWU, ERUXM or XM specimen, on each admission for inpatient FFP requests, every 3 months for outpatient FFP requests and on patients without a historical blood type when any other blood component is requested • ABORh testing for adults or Neonates may performed on the automated analyzer or by using the tube method. • ABORH test on patients less than 4 months old will be performed as Forward Type only using Tube Method or Pediatric Test on the ECHO analyzer.. • ABORHK will be performed as a Forward Type only using the Manual Tube Method. • Any patient who does not have a history of a previous Blood Type at a linked Sutter affiliate Lab, must have the blood type confirmed on a second sample prior to issuing any products. ◦ Unless the testing on the original sample is performed on the automated analyzer, the second type must be performed by a different CLS. ◦ Type confirmation is not required on SS patients or cord blood samples. • ABO/Rh retype must be performed **before** issuing type specific/compatible products for any patient who does not have a previous blood type on file.

Equipment/ Reagents/ Supplies

Equipment	Reagents	Supplies
• Centrifuge • Agglutination viewer	• Anti-A • Anti-B • ABO+Rh Control • A1 and B cells	• Disposable pipettes

Specimen Requirements	• Adults: One (1) 9 ml EDTA (preferred) or red stoppered tube without separator gel- minimum of 3ml. • Infants/Cord blood: Two EDTA microtainers or 1.0 ml EDTA or red stoppered tube without serum separator • Donor red blood cells

Quality Control	Daily Reagent Quality Control	
Procedure: ABO Cell Typing	Follow the steps below to perform an ABO forward type.	

Step	Action
1.	Label two (2) test tubes, one for Anti-A and one for Anti-B reagent and patient ID.
2.	Add one (1) drop of each appropriate blood grouping reagent to the labeled tube.
3.	Prepare a 3-5% suspension of patient cells.
4.	Add one drop of the cell suspension to each tube and mix gently.
5.	Centrifuge for time posted on centrifuge.
6.	Resuspend the cells by gentle agitation and examine macroscopically for agglutination.
7.	Grade reactions and immediately record results.
8.	If reactivity is 2+ or less, check microscopically for mixed field agglutination.

If:	Then:
Mixed field absent	Proceed with test interpretation
Mixed field present	• Indicates presence of dual population of RBCs. Transfusion of non-identical RBC products must be taken into account before interpreting results. • If no history of Blood Type prior to non-identical type RBC transfusion, Blood Type cannot be reported. Type "O" RBC will be transfused.

Procedure: ABO Serum Grouping	Follow the steps in the table to perform ABO reverse cell grouping. *Note: No serum grouping performed on infants less than 4 months old.*

Step	Action
1.	Label two (2) test tubes, one for A1 cells and the other for B cells.
2.	Add two (2) drops of patient plasma or serum to each test tube.
3.	Add one (1) drop each of A1 cells and B cells to the appropriate tube and mix gently.
4.	Centrifuge for time posted on centrifuge.
5.	Examine supernatant for hemolysis. Resuspend the cells by gentle agitation and examine macroscopically for agglutination.
6.	Grade the reactions and immediately record results.

Interpreting Results	If	Then

	Cells agglutinate and/or are hemolyzed	Positive reaction
	Cells do not agglutinate and/or are not hemolyzed	Negative reaction

The following table shows expected ABO grouping results:

	Anti-A	**Anti-B**	**A1 Cells**	**B Cells**
Group O	0	0	+	+
Group A	+	0	0	+
Group B	0	+	+	0
Group AB	+	+	0	0

If	**Then**
ABO type was drawn by non lab personnel for determining Rh Immune Globulin candidacy and no previous historical blood type	Insert test PB Result with dated free test comment: "ABORH not for transfusion, non lab collected specimen."
ABO result is AB and the Rh is positive.	Monoclonal control is used as an Rh control and must be run to rule out polyagglutinability.
Cell/serum discrepancy is detected.	Additional testing must be performed to resolve the discrepancy before the blood type can be reported.
If a patient has been transfused with components that are not ABO identical to his own	Consideration should be given to discrepancies resulting from circulating mixed cell types.
Infant	Reverse typing is omitted on infants less than 4 months due to passive transfer of maternal antibodies and the lack of infant antibody production prior to that age.

Procedure: Comparing Previous ABO Results to current ones	Follow the steps in the table to compare previous ABO test results to current ones.			
	Step	**Action**		
	1.	Compare ABO results of your test to ABO in patient's history.		
	2.	**If:**	**Then:**	
		ABO result on current test matches history	Proceed with reporting results	
		ABO result on current test does not match patient history	Refer to Attachment A: Resolving Patient History Discrepancy-ABO flow sheet to resolve discrepancy.	

Reporting: ABO	Enter results and interpretations directly into the LIS in the ABORH testing grid. J=ND, S=AB. Mf=mixed field if dual cell populations are present. *Note: enter J or ND for A1 and B cell on infants less than 4 months old*						
	Anti-A	**Anti-B**	**Cont**	**A1 Cells**	**B Cells**	**Interp**	
	1-4	0	J	0	1-4	A	

	0	1-4	J	1-4	0	B	
	0	0	J	1-4	1-4	O	
	1-4	1-4	0	0	0	S	

If:	Then:
Mixed field is present	Enter mf in testing grid. Add BBCNC comment and result free text comment with grade of reactivity
Patient has historical ABO type	No additional testing is added
Patient has no historical ABO type	Insert additional patient test %ARC or quick key T
ABORh type drawn by non lab personnel	Insert additional patient test PB. Free text result: date of specimen followed by "ABORH not for transfusion, non lab collected specimen"

Reporting: %ARC	Enter results and interpretations directly into the LIS in the ARC testing grid. J=ND, S=AB

Anti A	Anti B	Anti A,B
1-4	0	J
0	1-4	J
0	0	J
1-4	1-4	J

Related Documents	• Performing a Rh Blood Type • Checking a Unit Confirmation Type • Centrifuging a Specimen • Grading Reactions • Preparing a 3-5% cell suspension • Daily Reagent Quality Control • Resolving Patient History Discrepancies
References	• Manufacturer's Insert , Blood Grouping Reagent, Anti-A(ABO1) Seraclone Murine Monoclona, Anti-B(ABO2) Seraclone Murine Monoclonal and Anti A,B (ABO3) Seraclone Murine Monoclonal Blend • Seraclone Control ABO+Rh • Reagent Red Blood Cells Referencells, Pooled Cells

All revision dates:

Attachments

No Attachments

Approval Signatures

Step Description	Approver	Date
Laboratory Director	Lindsey Westerbeck: Dir, Lab	pending