Wake Forest Baptist Medical Center	**Acid Elution** BB.SP.1003.3	**Dept:**	324311
		Dept Name	Blood Bank
		Effective Date:	05/07/2001
		Revised Date:	
Name & Title: CLIA Laboratory Medical Director		**Contact:**	Julie Simmons
Signature:		**Date:**	

1. General Procedure Statement:

A. Purpose: Acid Elution is used to aid in the identification of unexpected antibodies eluted from red cells. Unabsorbed antibody surrounding the sensitized red cells is removed by washing with a wash solution which prevents the loss of absorbed antibody from the red cells. After washing, the antigen-antibody complex is broken by addition of a low pH solution. The recovered eluate is buffered by adding a base buffering solution. The pH is checked and the eluate is then ready for use.

1. Eluates are prepared by acid elution to aid in the following:

a) To identify the antibody responsible for a positive direct antiglobulin test in acquired hemolytic anemia or transfusion reaction.
b) To demonstrate the presence of a weak antigen
c) To identify antibodies causing hemolytic disease of the newborn.
d) To prepare specific antibody from sera containing unwanted antibodies.

2 Acid elutions are to be performed when:

a) Direct Coombs testing (DAT) is positive (DAT, C3d, IgG or IgG gel)
b) DAT is negative but there is suspicion that offending antibody can be eluted (eg. Anti-Jka or Anti-Jkb)
c) Requested by Physician or Management
d) In correlation with other techniques (eq. absorption-elution)
e) Remove antibody in eluate to use as future rare reagent.

B. Responsible Department/Scope:

i. Procedure owner/Implementer: Julie H. Simmons/Christina S. Warren
ii. Procedure prepared by: Kate James
iii. Who performs procedure: Department staff

C. Definitions:

DI- deionized water
Elu- elution
LW- last wash
DAT- direct antiglobulin test
WK+- weakly positive
LISS- low ionic strength medium
PEG- polyethylene glycol
SCC – Soft Computer Consultants, Blood Bank computer system

D. Sections:

I. Preparation of Working Wash Solution
II. Preparation of Acid Eluate
III. Testing the Acid Eluate in Gel and Gel Ficin
IV. Testing the Acid Eluate in LISS, PEG, Saline and Ficin Mediums
V. QC of pH Paper

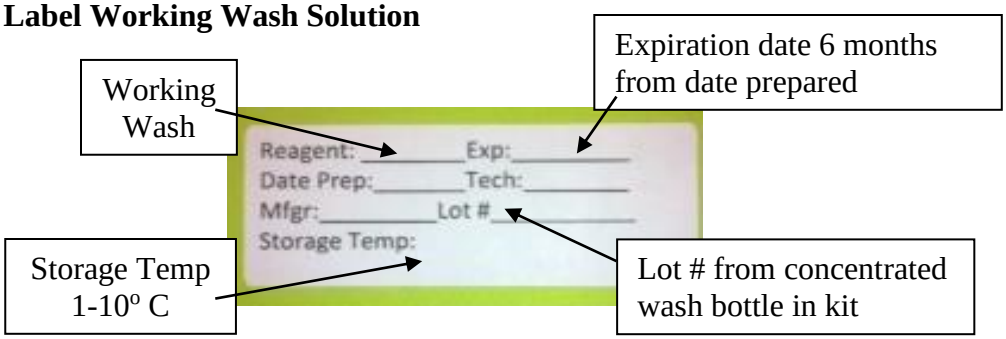
2. Procedure: I. Preparation of Working Wash Solution

Biological Risk Assessment: low
Chemical Risk Assessment: moderate
Protective Equipment: lab coat, gloves

Supplies: 12X75 test tubes, Transfer pipets: B/B-PET™, pH strips, Biohazard wipes
Reagents: 0.85% Blood Bank Saline, Immucor Gamma Elu-Kit™ II: consists of three solutions: Concentrated Wash Solution, Eluting Solution and Buffering Solution: *These solutions may be interchanged between lot numbers, providing they are in date.*
Equipment: 500 ml graduated cylinder, 1000 ml flask, parafilm. polyethylene wash bottle.
Specimen Requirements: Pink or lavender top EDTA tube labeled with the patient's name, medical record number, date of collection and identification of phlebotomist.

Caution: Concentrated Wash solution and Buffering Solution contain 0.1% sodium azide and is classified as harmful if swallowed. Sodium azide may react with lead and copper plumbing to form highly explosive metal azides. If discarded into sinks, flush with a large volume of water to prevent azide build-up

STEPS	INSTRUCTIONS	CHANGE/ APPROVAL
1.0	**Prepare Working Wash Solution** 1.1 Retrieve the Concentrated Wash Solution, the 50 ml bottle, from the kit. 1.2 Measure 450 ml DI water in a 500 ml graduated cylinder. a) Graduated cylinder is located behind the water baths in Component Prep area. 1.3 Pour the 450 ml of DI water into a 1000 ml flask. a) Flask is in old BMT tank room on top shelf of cabinet by the sink.	

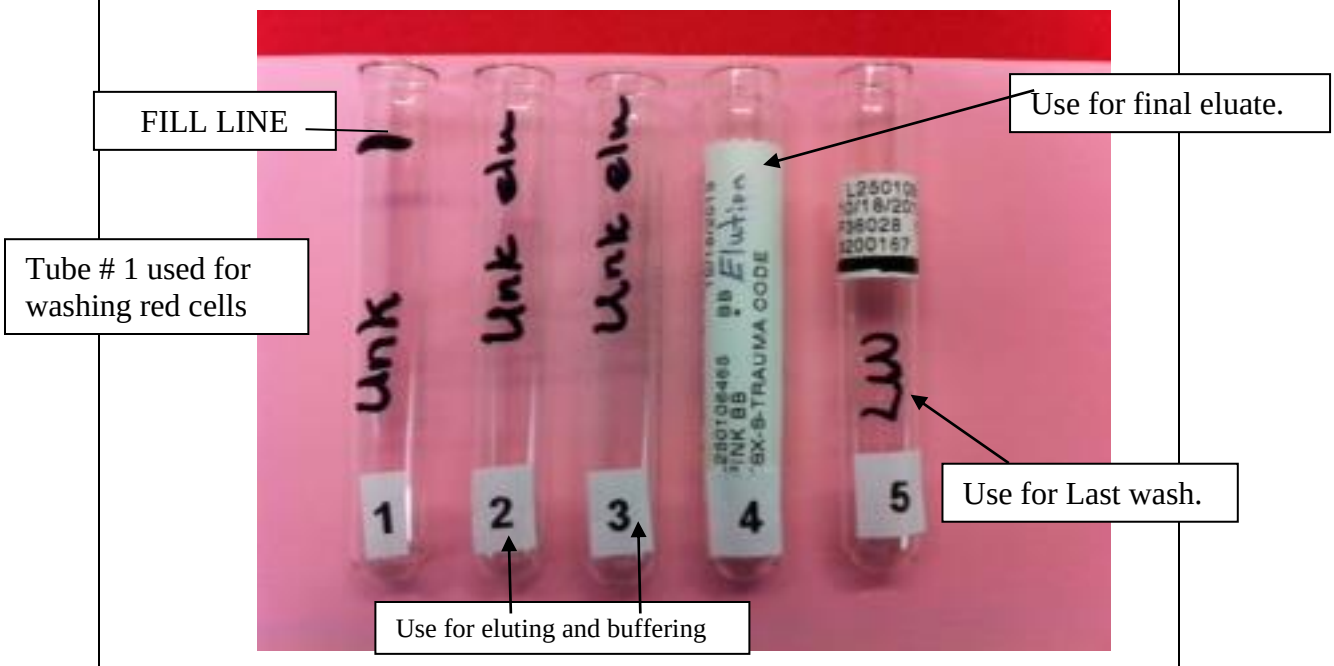
STEPS	INSTRUCTIONS	CHANGE/ APPROVAL
	1.4 Pour the entire bottle (50 ml) of concentrated wash solution into DI water. 1.5 Cover with Parafilm and mix well. 1.6 Store in a clean properly labeled polyethylene wash bottle.	
2.0	**Label Working Wash Solution**  Blank Reagent Labels are located in the blood processing area in the drawer labeled: Blank Reagent Labels	
3.0	**Return Working Wash Solution to refrigerator at 1º-6º C immediately after washing has been completed.**	
4.0	**Working Wash Solution will maintain a temperature of 1-10º C for 1 hour at room temperature.**	

II. Preparation of Acid Eluate

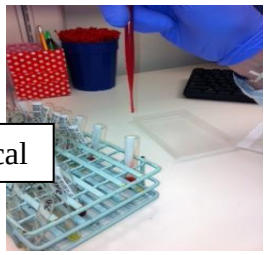
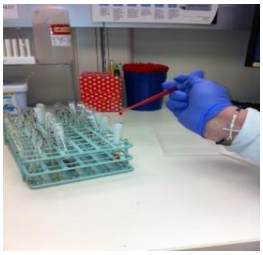
Biological Risk Assessment: low
Chemical Risk Assessment: low
Protective Equipment: Lab Coat/Gloves

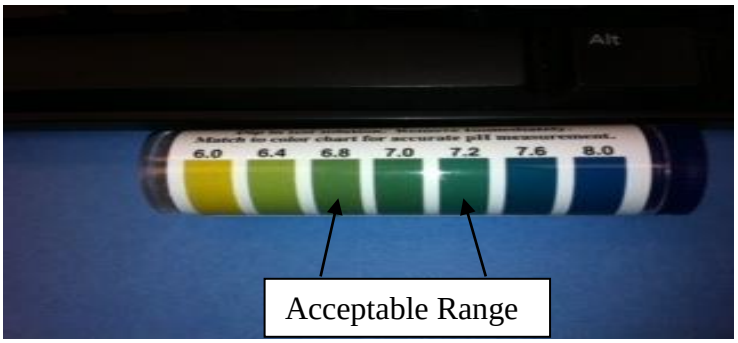
Supplies: 12X75 test tubes, Transfer pipets: B/B-PET™, pH strips, Biohazard wipes, Uni-Flex safety caps 12/13mm
Reagents: 0.85% Blood Bank Saline, Immucor Gamma Elu-Kit™ II: consists of three solutions:
Concentrated Wash Solution, Eluting Solution and Buffering Solution: *These solutions may be interchanged between lot numbers, providing they are in date.*
Equipment: high speed centrifuge, serofuge 3400-3600 RPM
Specimen Requirements: Pink or lavender top EDTA tube labeled with the patient's name, medical record number, date of collection and identification of phlebotomist.

STEPS	INSTRUCTIONS	CHANGE/ APPROVAL
1.0	**Label five 12X75mm test tubes as follows:** 1.1 Label **tube #1** with the first 3 initials of the patient's last name and mark a fill line near the top of the tube. 1.2 Label **tubes 2& 3** with the first 3 initials of the patient's last name and elu. 1.3 Label **tube # 4** with a large patient label and elution written on the label or tube. 1.4 Label **tube #5** with a small patient label and LW written on the label or tube. 1.5 Refer to BB Policy.1001 Labeling Test Tubes	



STEPS	INSTRUCTIONS	CHANGE/ APPROVAL
2.0	**Centrifuge the EDTA specimen in the high speed centrifuge for 3 minutes and remove as much plasma as possible with a transfer pipet to a tube labeled with either a small or large patient label.**	
3.0	**Transfer red cells to tube #1.** 3.1 The volume of packed red cells should be at least 1ml or 20 drops.	
4.0	**Washing Red Cells** 4.1 0.85% Isotonic Saline Wash a. Add 0.85% saline to **tube #1** fill line. b. Place cap on tube and mix. c. Centrifuge tube for 60 seconds at 3400-3600 RPMs. d. Remove saline with a clean transfer pipet. 4.2 Wash with Working Wash Solution * a. Fill tube with working wash to fill line. b. Place new cap on tube after each wash. c. Mix gently. d. Centrifuge tube for 60 seconds at 3400-3600 RPMs. e. Remove wash solution with a clean transfer pipet. 4.3 Repeat step 4.2 three times for a total of 4 washes. a Use a transfer pipet to save an aliquot of the supernatant at the red cell line from the last wash to **tube # 5** to serve as a control. b. Discarding the last wash requires the eluate to be repeated. c. Inadequate washing could lead to plasma antibody contamination. * *NOTE: Use of the low-ionic strength wash solution provided in the EluKit has been reported to give rise to the possibility of non-specific uptake of particularly strong antibody to antigen-negative red blood cells, leading to an eluate that is falsely positive. This is suspected when a known antibody is detected in the eluate and patient has been receiving antigen negative units. Consult with management. A new eluate may need to be prepared using only isotonic saline as the wash agent.*	

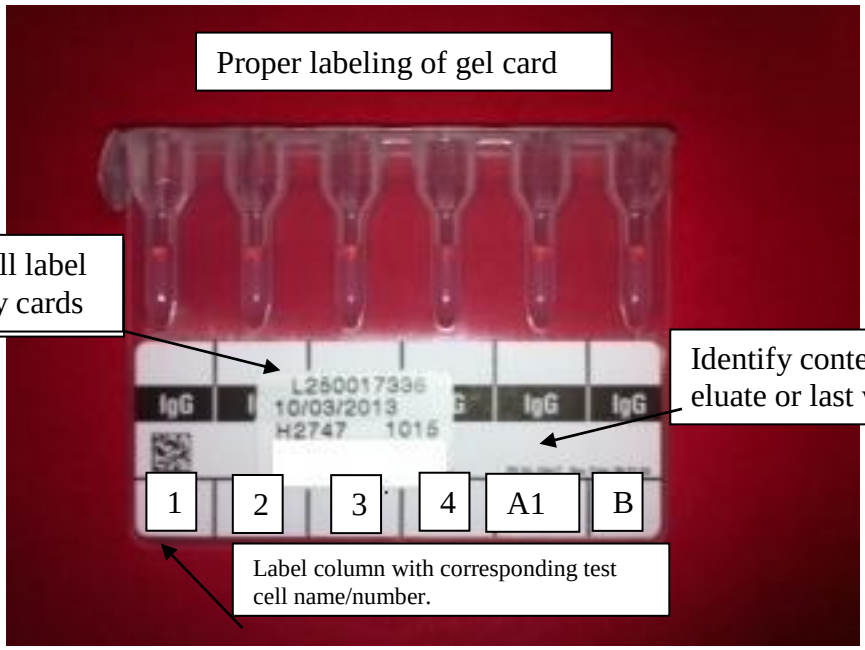
STEPS	INSTRUCTIONS	CHANGE/ APPROVAL
5.0	**Preparing Eluate** 5.1Transfer 1ml (approximately 20 large drops) of washed red cells to **tube # 2** using a clean transfer pipet. Vertical   Horizontal a. Be consistent in your method of pipetting throughout this entire procedure. 5.2 Add 20 drops (1ml) of Eluting Solution to elute the antibody. a. Maintain a 1:1 dilution by using equal drops of eluting solution and blood if there is less than 1ml. b. Eg. 10 drops of washed cells and 10 drops of eluting solution. 5.3 Cover with plastic cap. 5.4 Mix gently by inverting 4-5 times 5.5 Centrifuge immediately for 45-60 seconds at 3400-3600 RPMs. 5.6 Excess mixing or failure to centrifuge immediately will cause hemolysis which alters the pH of the eluate. 5.7 Transfer the supernatant to **tube #3** using a clean transfer pipet. Discard cells into the red biohazard trash can.	
6.0	**Buffering Eluate to a neutral pH of 7.0 ± 0.2.** 6.1 Add 5 drops of Buffering Solution to buffer the eluate. Mix well by gently shaking the tube. 6.2**.** Continue adding Buffering Solution dropwise, mixing well after each drop until a blue color appears and remains.(to indicate a pH range of 6.5-7.5)  6.3 Check Eluate with pH paper. a. Perform QC of pH paper if not done within past week. *Refer to Section V: QC of pH paper* b. Remove one pH strip from container. c. Place pH strip on clean orange biohazard wipe. d. Using a clean transfer pipet, place one drop of eluate on the end of the ph strip.	

STEPS	INSTRUCTIONS	CHANGE/ APPROVAL
	6.4 Compare pH paper with color chart on bottle.  6.5 If not within acceptable pH range, continue adding one drop of buffering solution at a time until the pH is 7.0 ± 0.2 6.6 Centrifuge the eluate again for 5 minutes to remove cellular debris. 6.7 Transfer to a **tube # 4**. The eluate is ready for testing. a. Store eluate at 1° to 10° C if there is a delay in testing. b. Eluate may be tested up to 7 days after preparation providing no turbidity is present. c. Do not freeze.	
7.0	**Proceed to testing eluate and last wash.** 7.1 Refer to SP: *Testing the Acid Eluate in Gel and Gel Ficin.* 7.2 Refer to SP: *Testing the Acid Eluate in LISS, PEG, Saline and Ficin Mediums*	

III. Procedure: Testing the Acid Eluate in Gel and Gel Ficin

Biological Risk Assessment: Moderate
Chemical Risk Assessment None
Protective Equipment: Lab Coat/Gloves

Supplies: Grifols Pipetor with settings of 12.5ul, 25ul and 50ul ,Pipet Tips, 100µl MLA pipet and tips, Transfer pipets B/B-PET™,12X75 test tubes
Reagents: Grifols Anti-IgG Card, Grifols Diluent –store at 2-8° C., 0.8% Screening or Panel cells – store at 2-8° C., 3.0% A1 and B cells – store at 2-8° C.,
Equipment: Calibrated Timer, Grifols Centrifuge
Specimen Requirements: Pink or lavender top EDTA tube labeled with the patient's name, medical record number, date of collection and identification of phlebotomist.

STEPS	INSTRUCTIONS	CHANGE/ APPROVAL
1.0	**Determine if antibody screen or panel are needed and label gel cards.** 1.1 For testing, label all Gel cards with small patient label, the number of the cell, and/or the A_1 or B type of the cell. a. When a small label is not available handwrite patient name and MRN. 1.2 For last wash control, label Gel cards with Screening Cells 1,2,3 in the same manner.  1.3 Remove the foil seal from the card leaving the unused wells covered.	

<table>
<tr><th>STEPS</th><th>INSTRUCTIONS</th><th>CHANGE/ APPROVAL</th></tr>
<tr><td>2.0</td><td>Dilute A_1 and B cells to 0.8%. Refer to Antibody Identification Techniques, Preparation of 0.8% Cells for Gel testing (if 0.8% are not available).

2.1 Label 2 12X75 test tubes with Lot # and either A1cells or B cells
2.2 Check that the Grifols pipet is set to 50µl or use the 100µl MLA pipet.
2.3 Using a clean pipet tip, pipet 100µl of Grifols Diluent to each tube.
2.4 Using a clean pipet tip for each cell, pipet 100µl of cells (2-4%) to appropriately labeled tube.
2.5 Centrifuge for 60 seconds at 3400-3600 RPMs in a centrifuge.
2.6 Use a disposable pipet to remove supernatant and discard.
2.7 Using a clean pipet tip, add 200µl of Grifols Diluent to packed red cells and mix.
2.8 Cap the 0.8% A1 cells and B cells and store in reagent refrigerator.
2.9 Expiration time for the diluted A1cells and B cells is 24 hours.
2.10 Label vials with: name of reagent, lot #, revised expiration date and time and prepared by (tech initials) .</td><td></td></tr>
<tr><td>3.0</td><td>Pipet cells and eluate or last wash into the corresponding gel well.

3.1 Check that pipet is set to 50ul.
3.2Using a clean pipet tip for each cell, pipet 50ul of 0.8% screening cells or panel cells and the 0.8% A_1 and B cells
3.3 Change pipet setting to 25ul.
3.4 Using a clean pipet tip, pipet 25uL of eluate to each microtubes labeled eluate
3.5 Using a clean pipet tip, pipet 25uL of Last Wash to microtubes labeled Last Wash.

<table>
<tr><th></th><th>Eluate Cards</th><th>Last Wash Cards</th></tr>
<tr><td>Screening Cells or Panel</td><td>50ul</td><td>50ul</td></tr>
<tr><td>A1 and B cells</td><td>50ul</td><td>50ul</td></tr>
<tr><td>Eluate</td><td>25ul</td><td></td></tr>
<tr><td>Last Wash (Control)</td><td></td><td>25ul</td></tr>
</table>
</td><td></td></tr>
</table>

<table>
<tr><th>STEPS</th><th>INSTRUCTIONS</th><th>CHANGE/ APPROVAL</th></tr>
<tr><td></td><td>3.6 When testing CORD eluates:

<table>
<tr><td>ABO of Baby</td><td>Cells to test</td></tr>
<tr><td>A</td><td>3 A1 cells* and O cells</td></tr>
<tr><td>B</td><td>3 B cells* and O cells</td></tr>
<tr><td>O</td><td>O cells</td></tr>
<tr><td>AB</td><td>3 A1 cells*, 3 B cells* and O cells</td></tr>
</table>
* 3 A1 and B cells must be from different lots.</td><td></td></tr>
<tr><td>4.0</td><td>Incubate at 37º ± 1.5 C (35.5° to 38.5°C) for the appropriate time depending on the strength of the DAT according to the table below.

<table>
<tr><td>DAT Strength</td><td>Incubation Time</td></tr>
<tr><td>Wk+ to 1+</td><td>40 minutes</td></tr>
<tr><td>2+ or greater</td><td>15 minutes</td></tr>
</table></td><td></td></tr>
<tr><td>5.0</td><td>Centrifuge the gel card in the Grifols Centrifuge at the preset conditions (9 minutes at 870-920 RPM).</td><td></td></tr>
<tr><td>6.0</td><td>Read the front of each microtube macroscopically.
6.1 Grade and record reactions.</td><td></td></tr>
<tr><td>7.0</td><td>Interpret results according to table below:

<table>
<tr><td>Result</td><td>Step</td></tr>
<tr><td>Agglutination in Control tubes</td><td>Repeat Eluate
Wash quickly and thoroughly</td></tr>
<tr><td>Agglutination in Eluate and
No agglutination in Control</td><td>Identify Antibody
Refer to Antibody identification procedure</td></tr>
<tr><td>No Agglutination in Eluate and
Control</td><td>
No Antibody Recovered</td></tr>
</table></td><td></td></tr>
<tr><td>8.0</td><td>Record results on appropriate antibody identification forms.</td><td></td></tr>
<tr><td>9.0</td><td>Discard gel cards in Red Biohazard trash cans.</td><td></td></tr>
</table>

<table>
<tr><th>STEPS</th><th>INSTRUCTIONS</th><th>CHANGE/
APPROVAL</th></tr>
<tr><td>10.0</td><td>Enter eluate interpretation in SCC.

10.1 Order elution in SCC.
a. ELU – To result up to 4 antibodies
b. ELU2 – If 5 to 8 antibodies
Result eluate as follows:

<table>
<tr><th>Reactions</th><th>Enter in SCC for eluate</th></tr>
<tr><td>All cells are nonreactive</td><td>Result: Negative</td></tr>
<tr><td>All cells are reactive</td><td>Result: Positive AND
ALL (All cells are positive) or WARM (warm autoantibody)</td></tr>
<tr><td>Specific antibody</td><td>Result: Positive AND
Result antibody identified in eluate
e.g. Anti-Fya would be ANFYA</td></tr>
</table>

10.2 Review results with management when it does not agree with clinical post or present patient findings.</td><td></td></tr>
</table>

IV. Testing the Acid Elution in LISS, PEG, Saline and Ficin mediums.

Biological Risk Assessment: Moderate
Chemical Risk Assessment: None
Protective Equipment: Lab Coat/ Gloves

Supplies: Transfer pipets B/B-PET™ **,** 12X75 test tubes, Biohazard wipes
Reagents: 0.85% Certified Blood Bank Saline for cell suspensions, 0.85% Certified Blood Bank Phosphate Buffered Saline for cell washers, LISS- store at 2-8° C., PEG- store at 2-8° C., Anti-IgG- store at 2-8° C., IgG sensitized cells- store at 2-8° C.,
Working Wash Solution- store at 2-8° C.
Equipment: Calibrated Timer, Serofuge 3400-3600 RPM, Cellwasher 3400-3600 RPM
Specimen Requirements: Pink or lavender top EDTA tube labeled with the patient's name, medical record number, date of collection and identification of phlebotomist.

<table>
<tr><th>STEPS</th><th>INSTRUCTIONS</th><th>CHANGE/ APPROVAL</th></tr>
<tr><td>1.0</td><td>Determine if antibody screen or panel are needed and label tubes.

1.1 For testing, label all 10X75 tubes with the first 3 initials of the patient's last name, the number of the cell, and/or the A_1 or B type of the cell.
1.2 For last wash control, label 10X75 tubes Screening Cells 1, 2, 3 and A_1 and B cells in the same manner.</td><td></td></tr>
<tr><td>2.0</td><td>Prepare a dry cell button of cells being tested.

2.1 Add one drop of 3-5% panel/screen/A or B cells into each labeled tube.
2.2 Add one (1) drop of 0.85% saline to each tube cell to be tested.
2.3 Centrifuge for 20 seconds 3400-3600 RPM.
2.4 Decant by quickly turning the tube upside down and allowing the saline to flow to the mouth of the tube where it can be removed with a biohazard wipe leaving the cell button behind and intact.</td><td></td></tr>
<tr><td>3.0</td><td>Review the strength of the DAT to determine the amount of eluate to add to the corresponding dry cell button in tube.

<table><tr><th>DAT Strength</th><th>Amount of Eluate to add</th></tr><tr><td>Wk + to 1+</td><td>4 drops</td></tr><tr><td>2+ or greater</td><td>2 drops</td></tr></table>
3.1 PEG is the potentiator of choice. Consult with management if questions.</td><td></td></tr>
</table>

<table>
<tr><th>STEPS</th><th>INSTRUCTIONS</th><th>CHANGE/ APPROVAL</th></tr>
<tr><td>4.0</td><td>

Incubate at 37º ± 2 C (35° to 39°C).

4.1 If using LISS, PEG or Ficin, incubate a minimum of 15 minutes to a maximum of 30 minutes depending on the strength of the DAT.

<table>
<tr><th>DAT Strength</th><th>Incubation Time</th></tr>
<tr><td>Wk+ to 1+</td><td>30 minutes</td></tr>
<tr><td>2+ or greater</td><td>15 minutes</td></tr>
</table>

4.2 If using Saline incubate for 60 minutes.
a. Refer to: SP: Antibody Identification

</td><td></td></tr>
<tr><td>5.0</td><td>

Remove tubes from 37ºC incubator.

5.1 Using LISS,PEG ,Saline or Ficin see the following chart:

<table>
<tr><th>Medium</th><th>After 37º incubation</th><th>Wash in cell washer</th></tr>
<tr><td>LISS</td><td>Spin for 20 seconds at 3400-3600 RPM.
Check for hemolysis.
Resuspend gently.</td><td>NA</td></tr>
<tr><td>PEG</td><td>Check for hemolysis
DO NOT SPIN</td><td>4 times</td></tr>
<tr><td>Saline</td><td>Spin for 20 seconds at 3400-
3600 RPM.
Check for hemolysis.
Resuspend gently</td><td>NA</td></tr>
<tr><td>Ficin</td><td>Spin for 20 seconds at 3400-
3600 RPM.
Check for hemolysis.
Resuspend gently.</td><td>NA</td></tr>
</table>

5.2 Add 10 drops of the **1ºC-10ºC** Working Wash Solution to the tubes and mix.
a. NA for PEG – should be washed four (4) times in cell washer.
5.3 Centrifuge for 30 seconds at 3400-3600 RPM unless using PEG.
5.4 Decant and blot dry. (see Step 2.3 of this procedure)
5.5 Refer to Cell Washer Operating Procedure *BB.EQUIP.1027*

</td><td></td></tr>
</table>

<table>
<tr><th>STEPS</th><th>INSTRUCTIONS</th><th>CHANGE/ APPROVAL</th></tr>
<tr><td>6.0</td><td>Add 2 drops of Anti IgG

6.1Mix well
6.2 Centrifuge for 20 seconds at 3400-3600 RPMs.
Note: With Management direction, Poly DAT and C3d/C3b complement Coombs may need to be substituted in certain patient workups.</td><td></td></tr>
<tr><td>7.0</td><td>Resuspend and read macroscopically and microscopically for agglutination.</td><td></td></tr>
<tr><td>8.0</td><td>Grade and record test results immediately.</td><td></td></tr>
<tr><td>9.0</td><td>Confirm all negative reactions by adding IgG sensitized cells

9.1 Mix and centrifuge for 20 seconds at 3400-3600 RPMs.
9.2 Repeat the test if there is no agglutination.</td><td></td></tr>
<tr><td>10.0</td><td>Interpret results according to the following table:

Interpretation of Eluate and Control<table><tr><th>Result</th><th>Step</th></tr><tr><td>Agglutination in Last Wash (Control) tubes</td><td>Repeat Eluate
Wash quickly and thoroughly</td></tr><tr><td>Agglutination in Eluate and
No agglutination in Last Wash tubes</td><td>Identify Antibody
Refer to Antibody identification procedure BB.SP.1002</td></tr><tr><td>No Agglutination in Eluate or
Last Wash tubes</td><td>No Antibody Recovered</td></tr></table></td><td></td></tr>
<tr><td>11.0</td><td>Record results on appropriate antibody identification forms.</td><td></td></tr>
<tr><td>12.0</td><td>Discard test tubes in Red Biohazard trash cans.</td><td></td></tr>
<tr><td>13.0</td><td>Record in SCC:
13.1 Review results with management when it doesn’t agree with clinical past or present patient findings.
Refer to Section III, Step 10.</td><td></td></tr>
</table>

V. QC of pH Paper

Biological Risk Assessment: Moderate
Chemical Risk Assessment: None
Protective Equipment: Lab Coat/ Gloves

Supplies: pH paper strips
Reagents: Level 1 and Level 2 dipstick controls
Equipment: NA
Specimen Requirements: NA

STEPS	INSTRUCTIONS	CHANGE/ APPROVAL
1.0	**Remove 2 pH strips from container.**	
2.0	**Add1 drop of Level 1 to one strip.**	
3.0	**Add 1 drop of Level 2 to the other strip.**	
4.0	**Record pH results on Rare Antisera QC sheet.**	
5.0	**Check dipstick control insert for expected range.**	
6.0	**Notify management if controls do not work.**	

3. Review/Revised/implemented:

All procedures must be reviewed according to Document Control Protocol.
All new procedures and procedures that have major revisions must be signed by the CLIA Director.
All reviewed procedures and procedures with minor revisions can be signed by the designated section medical director or designee.

4. Related Procedures:
Special Procedures: Antibody Identification Protocol

5. References: Technical Manual American Association of Blood Bank, Revised Periodically
Gamma Elu-Kit^{tm} II package insert Immucor, Revised Periodically
Ortho MTS Procedure Manual; Revised Periodically

6. Attachments: NA

7. Revised/Reviewed Dates and Signatures:
See Document Change Control

Document Change Control			
Title: Acid Elution			
Previous title:			
Written date		Written by:	
Validation date		Validation by	
Reviewed date		Reviewed by	
Approved date		Approved by	
Approved date		Approved by	
Effective date in use	<7/2009	In use by	See Archive Record

Revised Date	By	MD Date	By	MD Date	By	Review Date	By	Effective Date	By
12/11/12	KJ	GP	4/15/14	4/10/14	EF	4/10/14	JHS	4/15/14	JHS
Validate Date	By	Revisions: Working Wash solution utilizing entire amount in bottle. Making an eluate from an amount of RBC's less than 1ml added. Utilization of pH strips for proper buffer range added.							
04/03/14	LW								

Revised Date	By	MD Date	By	MD Date	By	Review Date	By	Effective Date	By
7/1/14	KJ			7/28/14	EF	7/16/14	MRJ	7/30/14	JHS
Validate Date	By	Revisions: Added QC of pH paper to procedure. In Section IV, step 5 added NA to wash in cell washer for LISS, Saline and Ficin.							
7/3/14	JHS								

Revised Date	By	MD Date	By	MD Date	By	Review Date	By	Effective Date	By
4/5/16	JJ	6/14/16	GP	6/10/16	EF	6/10/16	MRJ	6/14/16	JHS
Validate Date	By	Revisions: Changed procedure for making 0.8% cell suspension from 2-4% cell suspension in section III step 2.0. Added Ortho MTS Procedure manual to references.							
6/8/16	NJ								

Revised Date	By	MD Date	By	MD Date	By	Review Date	By	Effective Date	By
2/20/19	JHS			2/20/19	EF	2/20/19	JHS	2/21/19	JHS
Validate Date	By	Revisions: Removed Sunquest and added SCC. Removed references to Ortho and replaced with Grifols. Added SCC to definitions. Added * NOTE: Use of the low-ionic strength wash solution provided in the EluKit has been reported to give rise to the possibility of non-specific update of particularly strong antibody to antigen-negative red blood cells, leading to an eluate that is falsely positive. This is suspected when a known antibody is detected in the eluate and patient has been receiving antigen negative units. Consult with management. A new eluate may need to be prepared using only isotonic saline as the wash agent.							
2/20/19	LA								

Locations		Out of Use: Date:		By	
		Reason			

Reviews: Record date/initials

Date	Initials	Date	Initials	Date	Initials	Date	Initials
10/21/09	GP	10/27/09	MRJ	11/17/10	GP	05/14/13	EF
09/05/13	GP	10/01/13	MRJ	11/9/15	JHS	11/21/17	JHS
2/20/19	JHS						

Document Change Control			
Title: Acid Elution			
Previous title:			
Written date		Written by:	
Validation date		Validation by	
Reviewed date		Reviewed by	
Approved date		Approved by	
Approved date		Approved by	
Effective date in use	<7/2009	In use by	See Archive Record

Revised Date	By	MD Date	By	MD Date	By	Review Date	By	Effective Date	By
2/25/20	CSW								
Validate Date	By	Revisions: Added selected cells table for running Cord blood eluates. Removed Mary Rose Jones.							

Revised Date	By	MD Date	By	MD Date	By	Review Date	By	Effective Date	By
Validate Date	By								

Revised Date	By	MD Date	By	MD Date	By	Review Date	By	Effective Date	By
Validate Date	By								

Revised Date	By	MD Date	By	MD Date	By	Review Date	By	Effective Date	By
Validate Date	By								

		Out of Use Date:		By:	
		Reason			