1. **Principle**

The plasma in platelet components may need to be removed by washing to reduce the risk of a reaction in the recipient. Modification of platelets by washing will result in a decrease in the platelet yield (up to 33%) and platelet activation may occur.9.1

1. **Scope and Related Policies**
   1. The following are indications for washing platelets
      1. Neonates with thrombocytopenia due to anti-HPA-1a 9.1
      2. To reduce levels of IgA for IgA deficient patients with Anti-IgA exhibiting previous reactions 9.1
      3. Patients with progressive history of allergic reactions 9.1
   2. Each institution capable of washing platelets must establish the criteria for washing platelets.
   3. Mothers of neonates are the best source of HPA-1a negative platelets. The plasma of these mothers must be removed since it contains anti-HPA-1a.9.1
      1. Apheresis platelets collected from mothers of neonates with thrombocytopenia must be irradiated and may come in two bags of approx.150mL each.
      2. If two bags are collected, each maternal bag will be equivalent to approximately half of one adult dose of platelets. In most cases one bag is sufficient.
      3. If needed it is possible to pool both bags into one for washing.
   4. For adults, either a buffy coat platelet dose or an apheresis platelet dose may be used.
2. **Specimen – N/A**
3. **Materials**

**Equipment:** Refrigerated centrifuge

Weight scale

Laminar flow hood or clean area

Plasma extractor

Heat Sealer or hand sealer

**Supplies:** Transfer pack

Transfer sets – double spiked

Clips for sealing (if hand sealer used)

**Reagents:** 100 mL bags of sterile isotonic IV Saline

1. **Quality Control** 
   1. Equipment for centrifugation shall be maintained as per manufacturer’s recommendations including the speed of rotation and the timing device.9.2
   2. The temperature, speed and processing time for centrifugation shall be checked and documented at each use.9.2
   3. Policies, processes and procedures shall be established for the use of the laminar flow hoods including: 9.2

* Approved uses
* Instructions for use
* Decontamination after each use
  1. Manufacturer’s instructions on equipment must be followed.

1. **Procedure**

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| * 1. Turn on centrifuge and set temperature to 22ºC. | | | | |
| * 1. Place platelets in centrifuge cups and balance with appropriate saline bags and counterweights. | | * + 1. If both maternal units are to be used, open clamps and allow the contents of one bag to flow into the other. Close clamps. | | |
| * 1. Centrifuge at 2500 rpm for 7 minutes. | | | | |
| * 1. Following centrifugation, remove platelet bag(s) and place on plasma extractor. | | | | |
| * 1. For maternal Platelets: | | | | * + 1. Open tubing clamps and allow all of the plasma to drain into the other collection bag. Close the clamps. Go to step 6.7. |
| * 1. For apheresis platelets units or a buffy coat platelet pool: | | | | * + 1. Clamp the tubing on the transfer set. |
| * + 1. Pull the port cover off of the platelet bag and immediately remove the spike cover on the transfer bag line. |
| * + 1. Using aseptic technique, insert the spike into the platelet bag port. Open the clamp to allow **all** of the plasma to drain into the transfer bag. Close the clamps. |
| * 1. Aseptically remove the transfer probe from the platelet bag and replace with another transfer set attached to a 100mL bag of saline. | | | | |
| * 1. Open clamp on transfer set and drain the saline into the platelet bag. Close clamp and gently resuspend the platelets using thumb and finger to mix platelets into solution. Ensure platelets are totally mixed. | | | | |
| * 1. Place the platelet bag (with saline bag still attached) into a centrifuge bucket and using the scale, balance as before. | | | | |
| * 1. Confirm centrifuge temperature is 22ºC. Centrifuge at 2500 rpm for 7 minutes. | | | | |
| * 1. Remove platelet bag and place on plasma extractor. Open the clamp and drain off **all** of the saline. Close clamp. | | | | |
| * 1. Remove the probe from the bag and replace with another transfer set attached to saline bag, using the same port. | | | | |
| * 1. Place platelet bag on scale and note the weight of the platelet bag and using the transfer set open the clamp and transfer 30mL of saline to the bag (for neonates) or 50mL of saline (for adults). | | | | |
| * 1. Close clamp and seal tubing. Make three segments, approximately 0.5 inch apart. See Procedural Notes 8.3 if using a heat sealer. | | | | |
| * 1. Leave the platelet bag undisturbed at 20-24ºC (without agitation) for 60 minutes. Place the label side down. | | | * + 1. A 60 minute resting period prior to mixing is required for platelets to allow them to regain their functionality9.1, especially when platelets are fresh (<24-48 hrs old). | |
| * + 1. Platelets can be resuspended sooner in case of emergency. | |
| * + 1. Resuspend platelets by gentle hand manipulation to allow for uniform suspension. | |
| |  | | --- | | * 1. Prepare the label for the washed platelet bag with the following modified product information: 9.2 * Product name (e.g., washed platelets) * Name of facility preparing component * Unique numeric or alphanumeric identification of component. See Procedural Notes 8.1 * ABO/Rh of component * Approximate volume of component * Modified date and time of expiry of component (expiry is 4 hours from time unit was entered) | | Label the washed platelet bag with the following recipient information:9.1   * Recipient’s family and given name(s) * Recipient’s identification number(s) * ABO/Rh group of recipient |   See Procedural Notes 8.2 and prepare and attach a component label to washed platelet bag | | | | |
| 6.17 | Issue product. If there is no computer system used to issue blood components, write the patient and product information onto the Issue/Transfusion record. See Procedural Notes 8.4 and IM.004-Manual Issuing of Blood, Blood Components and Other Related Products Using the Issue/Transfusion Record. | | | |

1. **Reporting N/A**
2. **Procedural Notes**
   1. Unit number must include the unit ID number, the check digit and the source code of the original unit(s).
   2. When labeling units, the following criteria should be met:

* Whenever possible, place the label onto the label on the transfer bag
* Only labels with approved adhesive must be used on blood bags
* Do not use scotch tape, masking tape or other adhesives that are not approved
* Do not use felt pen on bag labels.
  1. The manufacturer’s directions should be followed when using a heat sealer device.
  2. Platelets are the component that is most likely to be contaminated with bacteria. See RT.012 – Investigation of Transfusion Complications.

1. **References**
   1. Fung MK ed. Technical Manual 18th Edition. Bethesda MD. AABB, 2014: 223,590-591.
   2. Standards for Hospital Transfusion Services ver 3 February 2011. Canadian Society for Transfusion Medicine: 3.3.2.1; 3.3.2.2; 3.3.5.1; 5.7.2.1; 5.5.1.1.
2. **Revision History**

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| **Revision Date** | **Summary of Revision** |
| September 1, 2014 | * Revised name of manual * Revised principle * Revised reference to random donor platelets * Updated all references to include the most recent version/edition and adjusted the page numbers cited as necessary |