

Subject: Cold Autoimmune Hemolytic Anemia Workup
Donath-Landsteiner Antibody
Sample Collection Instructions

Purpose:

To ensure proper collection of **Donath-Landsteiner** Antibody Test and other Cold Autoimmune Hemolytic Anemia collections sent to Hoxworth Blood Center for analysis.

In autoimmune hemolytic anemia (AIHA) RBCs are destroyed by antibodies made by a person against their own RBCs.

In the rare paroxysmal cold hemoglobinuria, the antibodies (**Donath-Landsteiner**) are IgG and are against the P blood group antigens. Such antibodies are usually associated with viral infections such measles and mumps and are usually found in children without lasting sequale.

Acute hemolysis results when warming follows exposure to the cold. The lysis is complement induced and takes place in warm conditions following antibody - RBC binding in the cold.

Materials:

1. Wide mouth thermos bottle (obtained from Hoxworth).
2. Plastic bag insert
3. Sterile venipuncture needle (21 gauge multi-sample) with adapter
4. Tourniquet
5. 2 x 2 gauze sponges
6. Alcohol prep pad
7. Bandage
8. Gloves
9. 3 - 10 ml plain red top tubes
10. 3- 7 ml EDTA Lavender top tubes
11. Water heated to 40°C

**Note: If only Donath-Landsteiner test is ordered: 10 ml blood in plain red top tube is needed.

Procedure:

A. Sample collection must be scheduled with Hoxworth Blood Center prior to having blood drawn.

1. Monday - Friday, 8am - 4:30pm: Call (513) 558-1547.
2. Weekends, Holidays, and after hours: Call (513) 558-1259.
Ask to speak with the Reference Laboratory Tech On-Call.
Leave your name, phone number and hospital name.
3. Hoxworth will send thermos.

B. Collection Procedure

1. Go to patient's bedside with the thermos bottle, plastic bag and venipuncture equipment.
2. All samples **must** remain at or above 37°C from the time of collection.
3. Fill the wide mouth thermos bottle 3/4 full with 40°C water.
4. Insert a plastic bag into the water and over the rim of bottle.
5. Cap the bottle.
6. Collect approximately 50ml of blood using vacutainer system for Cold Autoimmune Hemolytic Anemia Workup.
 - a. Collect 3 - 10 ml plain red top tubes.
 - b. Collect 3 - 7ml EDTA lavender top tubes.
7. Collect 10ml of blood using vacutainer system for **Donath-Landsteiner Only**
 - a. Collect 1 - 10 ml plain red top tube)
 - b. Label the tubes with patient's name, number, date, time of collection and collector's initials.
8. Place the tubes in the thermos and push them to the bottom of plastic bag insert so they are jacketed by the warm water.

9. Tightly seal the thermos bottle.
10. Return to the laboratory and **immediately send the thermos and a completed Reference Laboratory Consultation form to Hoxworth Blood Center Reference Laboratory.**
11. **Do not** spin, separate or otherwise manipulate the samples.

C. Reference Laboratory Request

1. Fill out Section A - "Reference Laboratory Request" with patient information, transfusion history and medications.
2. Check suspected problem in Section B - Cold Autoimmune Hemolytic Anemia Workup or write in Donath-Landsteiner under "Other".
3. Section C - Physician needs to indicate the type of testing requested.
4. Section D - Physician needs to indicate the transfusion needs of the patient.
5. Section E - "Request Submitted By", should be filled out and signed by Blood Bank Tech.

References:

Hoxworth Blood Center, University of Cincinnati Medical Center
Reference Laboratory, 3130 Highland Avenue, PO Box 67005
Cincinnati, Ohio 45267-0055.

Red Cell Disorders-Antibody Mediated Hemolysis, University of Virginia
Health System, Charlottesville, Virginia 22908