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**Lab Dept:** Transfusion Services

**Test Name:** TYPE AND DIRECT COOMBS

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***General Information***

**Lab Order Codes:** ABDC

**Synonyms:** Type and Coombs; ABO and Coombs; Type and DAT; ABO and DAT; ABO/Rh and Direct Coombs

**CPT Codes:** 86900 – ABO  
86901 – Rh  
86880 - Direct Coombs

**Test Includes:** ABO Group, Rh type and Direct Coombs (Direct Antiglobulin Test - DAT)

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***Logistics***

**Test Indications:** Evaluating the presence of Hemolytic Disease of the Newborn (HDN) or evaluating the potential cause of other red cell hemolysis.

**Lab Testing Sections:** Transfusion Service

**Phone Numbers:** MIN Lab: 612-813-6824

STP Lab: 651-220-6558

**Test Availability:** Daily, 24 hours

**Turnaround Time:** 30 minutes, up to 4 hours if DAT is positive.

**Special Instructions:** Provide diagnosis, transfusion history and pertinent medications to the laboratory. Additional specimen may be requested if elution studies are indicated.

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***Specimen***

**Specimen Type:** Whole blood

**Container:** Lavender top tube (EDTA)

**Draw Volume:** 0.5 mL blood (small EDTA tube) or 2 mL blood (large EDTA tube)

<b>Collection:</b>	All specimens submitted to the Transfusion Service must be appropriately labeled at the bedside with the time and date of collection, and the signature of the individual collecting the specimen. A completed order, either through the HIS or general requisition must accompany each specimen. It is not always necessary to collect a new sample prior to the provision of blood for patients. Consult with the Transfusion Service prior to collecting additional samples if the patient status is unknown.
<b>Special Processing:</b>	Lab Staff: Refrigerate specimen
<b>Patient Preparation:</b>	Refer to <a href="#">Collection of Patient Specimens</a> for full details. The patient must be positively identified when the specimen is collected. The label on the blood specimen must correspond with the identification on the patient's Medical Record wrist or ankle band (or ED ID) and on the physician's/practitioner's orders. The specimen must be timed, dated and signed by the phlebotomist at the bedside.
<b>Sample Rejection:</b>	Gross hemolysis; sample placed in a serum separator tube; specimen tube not properly labeled

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### ***Interpretive***

**Reference Range:** Negative

Additional information: Drugs, including the penicillins and cephalosporins,  $\alpha$ -methyl dopa, levodopa, quinidine, insulin, mefenamic acid, sulfonamides, tetracycline, and others may cause positive direct antiglobulin tests. Many positive direct antiglobulin tests are due to methyl dopa. Methyl dopa antibodies are predominantly IgG; about 1% of patients on methyl dopa develop hemolytic anemia, but as many as 15% develop a positive DAT. Although drugs and alloantibodies may cause a positive direct antiglobulin test, the majority have no such association. It is unusual to find a significant antibody in the eluate from a positive direct antiglobulin test. Broad spectrum or polyspecific antisera contain both anti-IgG and anti-C3d. Anti-IgG may be used to determine if the cells are coated with IgG. If indicated, red cell elutions and/or indirect antiglobulin test (antibody screen) and antibody identification are included in the workup of a positive direct antiglobulin test. In case of Hemolytic Disease of the Newborn or autoimmune hemolytic anemia, an eluate from the patient's red cells sometimes shows antibody specificity.

**Limitations:** False positives may occur with cold agglutinins and when the serum contains large amounts of paraprotein. Use of red top tubes or serum separator tubes may cause false-positive reactions, particularly if tubes have been refrigerated. The newborn's cells may have negative direct antiglobulin test in ABO hemolytic disease. Wharton's jelly from cord samples can cause false-positives. 2 - 4% of patients with clinical autoimmune hemolytic anemia have a negative Direct Coombs test.

**Methodology:** Hemagglutination Antiglobulin serum

**Contraindications:**

Refer to [ABO/Rh](#) or [Direct Coombs/Antibody Screen](#) for alternative testing batteries.

**References:**

N/A