

# Coombs test

## • Coombs test, direct

### General:

The direct Coombs test is also known as direct antiglobulin test. Irregular incomplete antibodies, which are fixed on the erythrocyte membrane, are visible with polyvalent Coombs serum (AHG, anti-complement). Irregular incomplete antibodies react as autoantibodies against erythrocytes and result in hemolysis, e.g. after transfusion. A more exact classification with monospecific Coombs serum facilitates the differential diagnosis of acquired immune hemolytic anemias. Specific autoimmune antibodies are determined, which indicate reactions against immunoglobulins or the complement system, e.g. against IgG, IgA, IgM, C3, C3d or C4. Determination of ANA, SS-A and SS-B is recommended in positive DCT, particularly in pregnant women (see also SS-A).

Indication: Suspicion of rhesus neonatal erythroblastosis (MHN, Morbus hemolytic neonatorum), hemolytic anemia, transfusion incidents

Material: 3 ml EDTA blood

Stability: Freshly collected blood is recommended. Samples which are not tested immediately should be stored at 2 to 8°C for 48 hours.

TAT: same day, FML

Method: AGGL

Units: negative

Note: False positive results can occur in contaminated (bacterial growth) material, in cases of primary ABO-incompatibility (mother's blood group - 0, child's A or B), in the presence of cold antibodies or medication-induced antibodies, in pernicious anemia, gammopathy, reticulocyte-rich blood, medication (e.g. cephalosporins)

## • Coombs test, indirect / IDC

### General:

By testing the indirect Coombs reaction it is assumed that a patient has developed circulating antibodies in blood against irregular antigens, such as anti-D. In contrast to the direct Coombs test, in-vitro sensitized test erythrocytes (test cells) carrying known antigens are used to demonstrate irregular patient antibodies in serum or plasma (anti-erythrocyte Abs). Antihuman globulin is used to visualize complexed test erythrocytes (which are loaded with incomplete patient antibodies). The exact classification of the antibody specificity is performed in the antibody differentiation test.

**Indication:** Antibody screening, prenatal care, blood donors, suspicion of immunohemolysis, transfusion reactions, differentiation of antibody specificity, antibody screening test, determination of blood group antigens Kell, Duffy, Kidd etc., cross-match.

**Material:** 1 ml serum

**Stability:** Freshly collected blood is recommended. Samples which are not tested immediately should be stored at 2 to 8°C for 48 hours.

**TAT:** same day, FML

**Method:** AGGL

**Units:** negative

**Note:** False positive results can occur in contaminated (bacterial growth) material, in the presence of cold antibodies or medication-induced antibodies, pernicious anemia, gammopathia, reticulocyte rich blood, medication (e.g. cephalosporins).

- **Coombs test, indirect titer**

**Material:** 1 ml serum

**TAT:** same day, FML

**Method:** AGGL

For complete list of laboratory test offered at Freiburg Medical Laboratory, please visit <http://www.fml-dubai.com/parameter-listings/>