

Blood Group Detection

Aim:- Study of blood groups in human. (ABO & Rh).

Introduction:-

Blood grouping is the classification of blood based on the presence or absence of two inherited antigenic substances on the surface of red blood cells (RBCs). The ABO and Rh are the major, clinically significant and the most important of all the blood group systems. . The ABO blood group system was first discovered by Karl Landsteiner in 1900. The human ABO blood group system is divided into the following four major groups depending on the antigen present on the surface of their red blood cells:

1. "A" group
2. "B" group
3. "AB" group
4. "O" group

Antigen on the surface of the Red Blood Cells	Antibodies in the Serum	ABO Blood group	Genotype
A	Anti A	A	AA or AO
B	Anti B	B	BB or BO
A & B	Neither Anti A nor Anti B	AB	AB
Neither A nor B		O	OO

The Rhesus system (Rh) is the second most important blood group system in humans. The most significant and immunogenic Rhesus antigen is the RhD antigen. The individuals carrying the Rh antigen are considered to have positive blood group whereas those individuals that lack this antigen are considered to have negative blood group.

Principle:-

The ABO and Rh blood grouping system is based on agglutination reaction. When red blood cells carrying one or both the antigens are exposed to the corresponding antibodies they interact with each other to form visible agglutination or clumping. Blood group A individuals have A antigens on RBCs and anti-B antibodies in serum. Similarly, blood group B individuals have B antigens on RBCs and anti-A antibodies in serum. Blood group AB individuals have both A and B antigens on RBCs and neither anti-A nor anti-B antibodies in serum. Whereas, blood group O individuals have neither A antigens nor B antigens, but possess both anti-A and anti-B antibodies in serum.

Requirements:-

70% Alcohol/ Spirit, Blood Grouping Kit, Cotton, lancet, Cavity Slide.

Procedure:-

1. Dangle the hand down to increase the flow of blood in the fingers.
2. Clean the fingertip to be pierced with spirit or 70% alcohol (usually ring or middle finger).
3. With the help of the sterile lancet, pierce the fingertip and place one drop of blood in each of the cavities.
4. Add one drop of antiserum into each cavity.

Observation and Result:-

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