

Blood grouping

- Individuals have different types of inherited *antigen* (called *agglutinogens*) on the surfaces of their erythrocytes, which determine the individual's *blood group*.
- If individuals are transfused with blood of the same group, i.e. possessing the same *antigens*, their immune system will not recognise them as foreign and will not reject them. However, if they are given blood of a different blood type, i.e. with a different type of antigen on red cells, their immune system will aggravate and destroy the transfused cells. This is the basis of the *transfusion reaction*; i.e. the blood of the donor and the recipient, are incompatible.
- There are many different type of blood group system (like e Lewis, Kell, Kidd, and Duffy systems), but the most important are the ABO and the Rhesus systems.
- **The ABO system** The ABO blood group is based on 02 glycolipid antigens called A and B. People whose RBCs display *only* antigen A have type A blood. Those who have *only* antigen B are type B. Individuals who *have both A and B antigens* are type AB; those who have *neither* antigen A nor B are type O (45% people)

Blood plasma usually contains antibodies called *agglutinins* that react with the A or B antigens if the 02 are mixed. These are the *anti-A antibody*, which reacts with antigen A, and the *anti-B antibody*, which reacts with antigen B.

