

Biology 40S – Les 6

Name _____

Blood Types

_____: Protein on the surface of cells. (in blood, Allele A makes A antigen. Allele B makes B antigen. Allele O makes no antigens.)

_____: Protein in plasma that reacts with specific antigens that enter the blood (usually something that isn't supposed to be there!). (Ex.: Anti-A is an antibody that recognizes A-antigen, binds to it (lock & key), then causes clumping together or clotting of similar A-antigens.)

These are often depicted **Y-shaped**.

_____: clumping of blood cells

_____: type of gene present (or _____)

_____: the expression of the gene we observe

Everybody has a blood type.

There are several classifications possible.

The most common blood type classification system is the **ABO system** discovered by Karl Landsteiner in the early 1900s.

There is also the **Rh** (Rhesus factor) as well, especially important for childbirth.

There are four types of blood in the _____: A, B, AB, and O.

There are two types of blood in the _____: Rh+ and Rh-

Your blood type is established before you are born, by specific genes inherited from your parents. You receive one gene from your mother and one from your father; these two combine to establish your blood type. These genes can appear in different versions or _____.

There are _____ alleles of the blood type gene: A, B, and O.

These two genes determine your blood type by causing proteins called **ANTIGENS** to exist on the surface of all of your red blood cells.

Since everybody has two copies of these genes, there are _____ possible combinations; AA, BB, OO, AB, AO, and BO. In genetic terms, these combinations are called _____, and they describe the genes you got from your _____.

In addition to the proteins (antigens) existing on your red blood cells, other genes make proteins called _____ that circulate in your blood plasma.

Antibodies are responsible for ensuring that only the blood cells of your blood type exist in your body. They attack and stick foreign red blood cells together—this clumping is called _____.

