



co-dominance

## Co-dominance

Co-dominance is the type of dominance where the offspring show similarity to both the parents and it is due to the blending of alleles.

Let us learn more about codominance in the coming lines.

When the F1 generation exhibits both the parental characters, this is called codominance. The offspring will be a combination of both the parent. The ABO blood group system is one of the best examples of codominance.

There are different types of red blood cells such as A, B, AB and O with or without the Rh factor. The difference is in the antigen present on the red **blood cell** surface which determines the specific blood group in an organism.

For example: If a person is blood group A, it means the RBC surface consists of antigen-A. But this is decided by the gene I. The gene I has three types of alleles namely, IA, IB and i. The alleles IA and IB produce two different antigens while the allele-i does not produce any antigen. Hence, alleles IA and IB are dominant over the allele i.

As we know, each diploid organism bears two pairs of alleles. Hence, in humans, there are two types of alleles of any combination. Depending on the combination and dominance of allele blood type of an individual could be determined. The different combination of alleles and their type of **blood groups** are given below.

In the above example, A person with blood group A indicates that he has an  $I^A$  and  $i$  pair of alleles. This is because the allele  $i$  is recessive in character and no antigen is produced. However, a person who possess both the alleles  $I^A$  and  $I^B$ , they have blood group AB. This is because of alleles  $I^A$  and  $I^B$  are codominant. Both the gene will produce their type of antigen.

Genotype	Blood type
$I_A I_A$	A
$I_A I_B$	AB
$I_A i$	A
$I_B I_B$	B
$I_B i$	B
$ii$	O

### Codominance in Chickens

Black Chicken = BB

White Chickens = WW

Andalusian (Black & White) = BW

### ROAN Codominance in Cattle Red Cattle = RR (homozygous)

White Cattle = WW (homozygous)

Roan (Red & White Hair) = RW (Heterozygous)

ROAN

