

Interference and Coincidence :

Crossing over does not occur uniformly along a chromosome and also the formation of one chiasma reduces the probability of another chiasma formation in an immediately adjacent region of the chromosome. This lack of independence is known as interference.

The net result of interference is the observation of fewer double cross over types than would be expected according to two map distance. This phenomenon, first observed by H. J. Muller in 1911, was also termed as chiasma interference. Interference varies in different sections of the chromosome and is measured by the co-efficient of co-incidence.

Co-efficient of co-incidence is the ratio between the observed and the expected double cross overs. The expected double cross overs are equal to the frequency of crossing over in the first region \times frequency of crossing over in the second region \times no. of progeny.

So, co-incidence + interference = 1
If the co-efficient of co-incidence is = 0 ; then interference is complete and no cross overs are observed.

Between 0 and 1 indicates partial interference = 1 ; then there is no interference and all the expected double cross overs are observed.