

Key Takeaways of the course 2, Chapter III

Linkage refers to genes located on the same chromosome. These genes tend to be inherited together because they do not assort independently.

Complete Linkage occurs when linked genes do not separate during meiosis, resulting in only parental phenotypes.

Incomplete Linkage involves genes that can be separated by crossing-over, producing both parental and recombinant phenotypes, though parental types appear more frequently.

Two-Point Test Cross is used to determine if two genes are linked and to estimate the distance between them.

Linked genes will produce a deviation from the expected 1:1:1:1 ratio in the offspring of a test cross.

Recombinant Frequency allows calculation of genetic distance, with higher recombination rates indicating greater distances between genes.

Three-Point Test Cross helps determine both the gene order and distances between three linked genes.

Gene Order is determined by identifying double-crossover events, which have the lowest frequencies.

Linkage Distance between genes can be calculated using crossover frequencies, allowing for the construction of a gene map.

Gene Mapping: Distances are often calculated in centimorgans (cM), with one cM representing a 1% crossover frequency.