

Chromosomes, meiosis and gametes

Define locus.

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What is meant by linked genes?

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How can linkage be broken?

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Where and when does crossing over occur?

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What is independent assortment?

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Formula for the number of chromosome combinations in gametes?

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Function of the acrosome?

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What is the zona pellucida?

Genes at different loci on the same chromosome, which tend to be inherited together.

The location of a gene on a chromosome.

Prophase I of meiosis, between non-sister chromatids of homologous chromosomes at chiasmata.

By crossing over during meiosis, which separates alleles on the same chromosome. Genes further apart are separated more often.

2^n , where n is the haploid number.

The random orientation of homologous pairs at the equator in metaphase I, giving random combinations of maternal and paternal chromosomes in gametes.

A jelly-like layer of glycoproteins around the egg cell, with sperm receptors; it hardens after fertilisation.

A modified lysosome containing hydrolytic enzymes that digest the zona pellucida.

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Why does an egg cell have a large cytoplasm?

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What is the acrosome reaction?

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What is the cortical reaction?

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What is polyspermy?

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What guides the pollen tube?

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What is double fertilisation?

Release of enzymes from the acrosome by exocytosis when the sperm contacts the zona pellucida; they digest a path through it.

It contains food stores to supply the early embryo.

Fertilisation of an egg by more than one sperm; it gives an abnormal number of chromosomes.

Cortical granules release enzymes that harden the zona pellucida, preventing polyspermy.

One male nucleus fuses with the egg nucleus (diploid zygote) and the other with the polar nuclei (triploid endosperm).

Chemicals released by the ovule; the tube grows down the style to the micropyle.