Haploid Encyclopedia Article

Haploid

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A cell is haploid (from Greek *haploos* = single, *ploion* = vessel) if it contains only one set of chromosomes, as opposed to most body cells that contain two sets of chromosomes. A haploid cell is symbolized as "n."

In all cells of organisms, with the exception of the sex cells and the gametophyte generation in plants, chromosomes are arranged in pairs, called homologous pairs. The chromosomes in homologous pairs are the same size and have genes for the same traits. Each chromosome in the homologous pair comes from a different parent. A cell that has both chromosomes of each homologous pair is a diploid cell. A diploid cell is symbolized as "2n." In the human body, diploid cells have 46 chromosomes arranged in 23 homologous pairs.

A cell is haploid if it has only one chromosome from each homologous pair. The only cells in an organism that are haploid are the gametes, the sperm and eggs. In addition, in plants, the gametophyte generation is also haploid. During the process of meiosis, a series of divisions of the nucleus, the homologous pairs of chromosomes in a diploid cell split apart, forming haploid sperm and egg cells. In the human body, haploid cells have 23 chromosomes, no longer arranged in pairs.

During fertilization, a haploid sperm cell joins together with a haploid egg cell. The homologous pairs of chromosomes are restored, and the resulting cell will no longer be haploid. It will be a diploid cell, with the normal number of chromosomes for a body cell. For example, in the human body, a sperm with 23 chromosomes will join together with an egg containing 23 chromosomes. The resulting zygote will be diploid, with 46 chromosomes arranged in 23 homologous pairs.