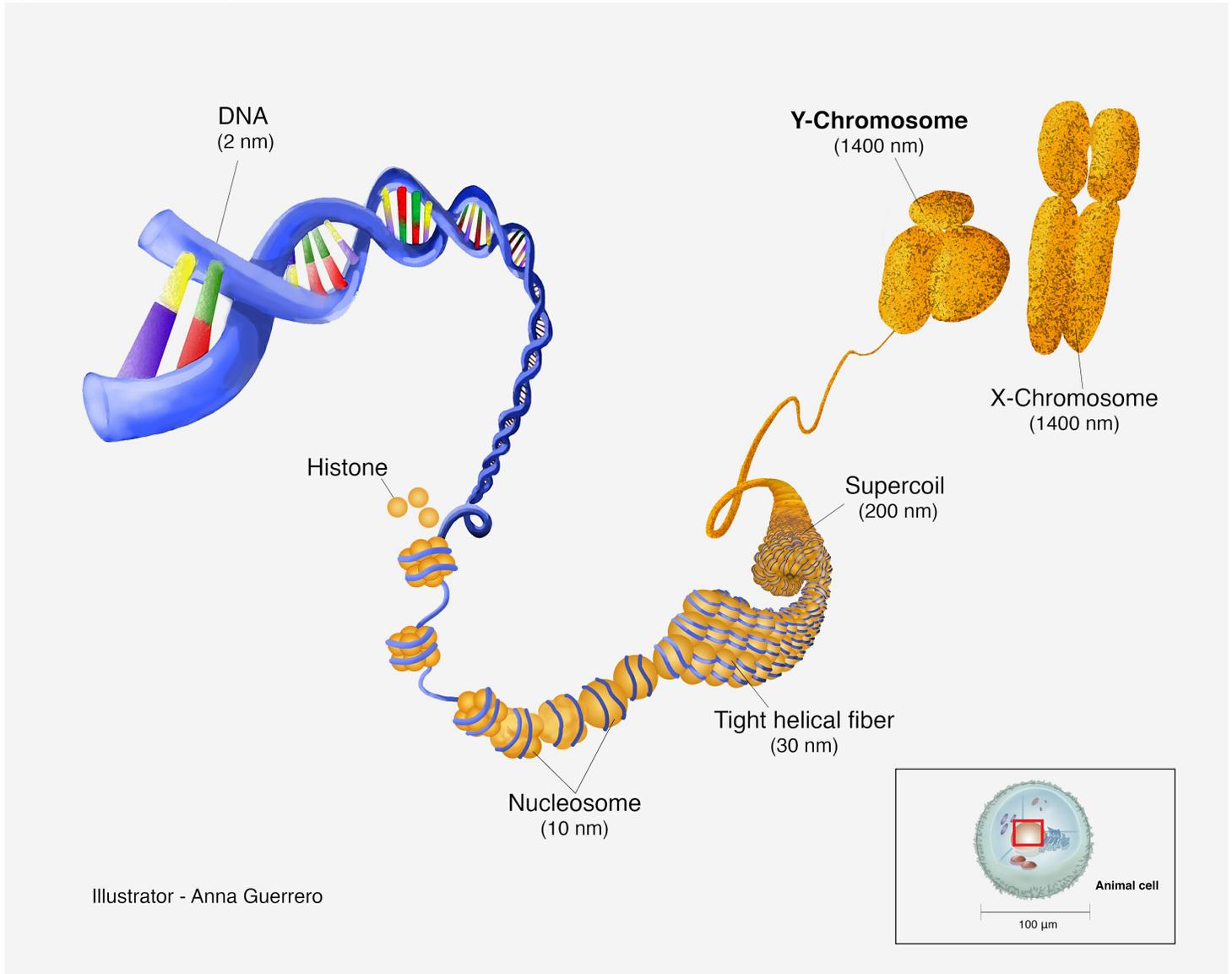


DNA and X and Y Chromosomes [1]

By: Guerrero, Anna Keywords: [Chromosomes](#) [2]



Y-chromosomes exist in the body cells of many kinds of male animals. Found in the nucleus of most living animal cells, the X and Y-chromosomes are condensed structures made of DNA wrapped around proteins called histones. The individual histones bunch into groups that the coiled DNA wraps around called a nucleosome, which are roughly 10 nano-meters (nm) across. The histones bunch together to form a helical fiber (30 nm) that spins into a supercoil (200 nm). During much of a cell's life, DNA exists in the 200 nm supercoil phase. But when DNA replicates itself, supercoils condense further into visible chromosomes with diameters of about 1400 nm. The X- and Y-chromosomes carry the genetic information that determines the sex of many types of animals. The Y-chromosome contains a gene called the sex-determining region Y, or the SRY gene in humans. If a fertilized egg, called a zygote, has the SRY gene, the zygote develops normally into an adult organism with male sex traits. Zygotes without the SRY gene develop to have female traits. Zygotes with Y-chromosomes but mutated SRY genes can develop into adult organisms that have female traits.

Subject

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