Chromatin is a complex of macromolecules found in cells, consisting of DNA, protein, and RNA. The primary functions of chromatin are 1) to package DNA into a smaller volume to fit in the cell, 2) to reinforce the DNA macromolecule to allow mitosis, 3) to prevent DNA damage, and 4) to control gene expression and DNA replication. The primary protein components of chromatin are histones that compact the DNA. Chromatin is only found in eukaryotic cells (cells with defined nuclei). Prokaryotic cells have a different organization of their DNA (the prokaryotic chromosome equivalent is called genophore and is localized within the nucleoid region).

Epigenetic regulators (histone acetyltransferases, methyltransferases, chromatin-remodeling enzymes, etc) play a fundamental role in the control of gene expression by modifying the local state of chromatin. However, due to their recent discovery, little is yet known about their own regulation

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