

Structure relevant to cell growth

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Utah researchers found a special type of molecular structure that helps keep genes properly turned off until the structure is ejected.

In all organisms, the genome is split into chromosomes -- compressed long strands of DNA, which are subdivided into functional DNA segments called genes. Genes function as the blueprints for building particular pieces of cellular machinery.

However, different types of cells each require different types of cellular machinery, and must produce that machinery according to a biological timetable. A central issue in molecular biology is finding out how a cell regulates which genes are on, or active, and which genes are off, or repressed.

This topic has direct relevance to human disease, as improper activation or repression of genes that regulate cellular growth is a common feature of cancer cells.

"We must understand how genes are activated or repressed in normal cells in order to understand how this process is misregulated in cancer cells," says lead researcher Brad Cairns, of the Huntsman Cancer Institute at the University of Utah.

The findings are reported in journal *Cell*.

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