## **Transcriptional regulation**

In molecular biology and genetics, transcriptional regulation is the means by which a cell regulates the conversion of DNA to RNA (transcription), thereby orchestrating gene activity. A single gene can be regulated in a range of ways, from altering the number of copies of RNA that are transcribed, to the temporal control of when the gene is transcribed. This control allows the cell or organism to respond to a variety of intra- and extracellular signals and thus mount a response. Some examples of this include producing the mRNA that encode enzymes to adapt to a change in a food source, producing the gene products involved in cell cycle specific activities, and producing the gene products responsible for cellular differentiation in higher eukaryotes, as studied in evolutionary developmental biology.

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