

Functional Genomics – decoding the instruction manual



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Genomes are long nucleotide polymers with a simple four letter code. Despite the apparent simplicity this polymer contains the entire instruction manual for life. The complexity arises from the interaction between this code and the environment. The code is transcribed and translated into RNA and protein products that execute cellular functions but also feed back to determine which parts of the genome can be read under the given conditions. Until recently, one could only study small regions of the genome at a time; however, recent developments in next generation sequencing-based technologies have allowed us to explore the complex regulatory networks at a genome-wide level in living cells. We use these technologies to understand the crosstalk between the genome and metabolism in living cells.