

In genetics, complementary DNA (cDNA) is DNA synthesized from a single stranded **RNA** (e.g., messenger RNA (**mRNA**) or microRNA) template in a reaction catalyzed by the enzyme **reverse transcriptase**. cDNA is often used to clone eukaryotic genes in prokaryotes. When scientists want to express a specific protein in a cell that does not normally express that protein (i.e., heterologous expression), they will transfer the cDNA that codes for the protein to the recipient cell. cDNA is also produced naturally by **retroviruses** (such as HIV-1, HIV-2, simian immunodeficiency virus, etc.) and then integrated into the host's genome, where it creates a provirus.

The term cDNA is also used, typically in a bioinformatics context, to refer to an mRNA transcript's sequence, expressed as DNA bases (GCAT) rather than RNA bases (GCAU).

cDNA is derived from **mRNA**, so it contains only **exons**, with no introns.

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