

Chemical Synthesis of a cDNA and Its Expression Analysis

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Abstract : Synthetic cDNA (ScDNA) of granulocyte colony-stimulating factor (G-CSF) was constructed using a DNA synthesizer with the aim to increase its expression level. 5' end of the ScDNA of G-CSF coding region was modified by decreasing the GC content without altering the predicted amino acids sequence. The identity of the resulting protein from ScDNA was confirmed by the highly specific enzyme-linked immunosorbent assay. In conclusion, a synthetic G-CSF cDNA in combination with the recombinant DNA protocol offers a rapid and reliable strategy for synthesizing the target protein. However, the commercial utilization of this methodology requires rigorous validation and quality control.

Keywords : synthetic cDNA, recombinant G-CSF, cloning, gene expression

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