

Abbreviations

CT scan (a computer tomography),

IMR (magnetic resonance imaging),

PET (positron emission tomography),

Abstract

Over the years, the main focus of gene therapy research has been to treat cancer. Although no cancer gene therapy drugs are currently on the market, significant progress has recently been achieved in characterizing possible targets and creating viral and non-viral gene delivery systems. So far, many genes have been investigated as potential targets for cancer gene therapy. Combining gene therapy with traditional treatment like chemotherapy, radiation, and immunotherapy has boosted therapeutic efficacy even more.

Nanotechnology has the potential to improve the selectivity and efficiency of chemical, physical, and biological approaches to cancer cell death while reducing nonmalignant cell damage.

Key words

Cancer therapy, nanotechnology, gene therapy, monoclonal antibodies, immunology, cancerous tumors, chemotherapy, targeted therapy, immune therapy, viral vectors, cytokines, nanoparticles,