

Advancements in CRISPR-Cas9 for Cancer Therapy

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Abstract. This article explores the revolutionary use of CRISPR-Cas9 gene-editing technology in cancer treatment. It delves into recent case studies where CRISPR has successfully targeted and modified genetic mutations driving cancer progression. The potential benefits and ethical implications are also discussed, highlighting CRISPR's role in personalized medicine. This overview provides insights into the future of gene therapy, emphasizing its transformative impact on oncology and patient care.

Keywords: CRISPR-Cas9, cancer therapy, gene editing, oncology, personalized medicine

Introduction

In recent years, CRISPR-Cas9 technology has emerged as a groundbreaking tool in the field of genetic engineering. Its precision in editing genes has opened new frontiers in medical research, particularly in the fight against cancer. This article reviews recent advancements in using CRISPR-Cas9 for targeting specific cancer-related genes, offering potential pathways for more effective and personalized treatments. The discussion includes case studies where CRISPR has been employed to disrupt oncogenes, repair tumor suppressor genes, and enhance immune system targeting of cancer cells. While the promise of CRISPR is immense, the article also addresses the ethical concerns and challenges in ensuring safe and targeted interventions. As this technology continues to evolve, it holds the potential to revolutionize oncology.

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References

1. Viroliya, K., Hojjat, A., Pena, B., Bhatt, H., Mehta, N. N., Venkata, S. Y., ... & Palabindela, P. (2023). Sa1359 *HELICOBACTER PYLORI* ASSOCIATED GASTRO-INTESTINAL BLEEDING IN BARIATRIC SURGERY-NATIONWIDE SURREY. *Gastroenterology*, 164(6), S-373.