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Virtual Meet on MEDICAL ONCOLOGY AND TUMOUR CELLS

July 28, 2021 | Webinar

# Crispr/cas9 engineered car-t cells therapy: game changer in cancer therapeutics

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CRISPR is the Noble prize winner customized gene editing tool that has taken the research world by storm being the efficient genome editor to fix cancer as well as several hereditary disorders as compared to other gene editing tools like Zinc-finger nucleases (ZFNs), Transcription activator-like effector nucleases (TALENs). CRISPR becomes the game changer in cancer therapeutics after the two recently published path-breaking clinical trials that reported the safety and efficiency of using CRISPR/Cas9 edited, patient-derived T cells (CAR-T cells) to treat refractory cancers.

This article discusses the literature about the mechanism of CRISPR gene editing used in pre-clinical and clinical trials in oncology, focusing mostly on PD-1 knockout CAR-T cell therapy which provides the way for CRISPR to be the most favored technique to help treating cancer and other diseases in future. It also discusses the shortcomings of CRISPR such as unintended on-target and off-target cuts, embryonic germ-line editing and the recent advances that overcome the hurdles and further increase the efficiency of this technique. Till date only somatic cell editing is ethically approved and further research is required to support germ-line editing in humans for the treatment of genetic disorders.

## Biography

Afreen Khan obtained her M.SC degree in Medical Biochemistry at Integral Institute of Medical Sciences and Research, Lucknow, India. She is currently in her third-year of her PhD in Medical Biochemistry at Era's Lucknow Medical College, India. Her main research interest centers early diagnosis and treatment of cancers. Her current research is a molecular analysis of various genes that participates in the progression of cancer to have a better understanding of the molecular pathways involved in cancer. Future prospects of her research focusses around development of efficient drug or gene therapy to as a potential cancer therapeutic.

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