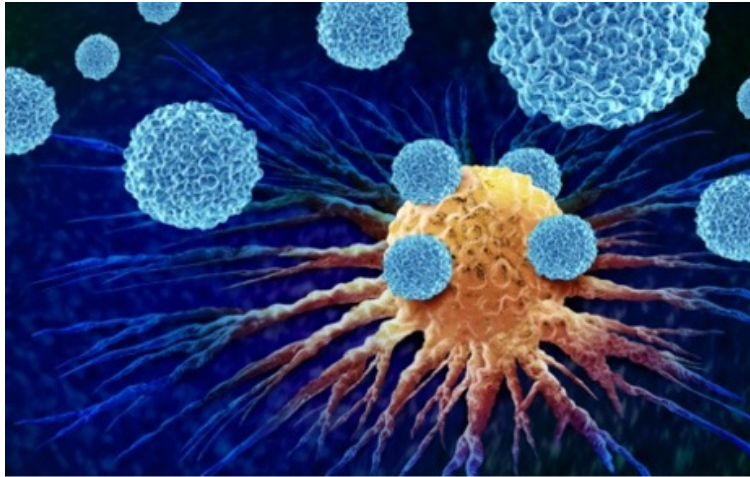




Monitoring Response to Immunotherapy

Technology number: 2022-265



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Category

Diagnostics
Medical Devices

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OVERVIEW

Scaffolds for capturing immune cells to monitor immunotherapy responses

- Provides real-time insights into immune responses and therapy efficacy
- Useful for personalized cancer treatment, immunotherapy monitoring, and research in immune responses

BACKGROUND

Monitoring immune responses during cancer treatment, particularly with immunotherapy, is crucial for optimizing patient outcomes. Historically, methods like blood tests and biopsies have been used to assess immune activity; however, these techniques often lack the sensitivity needed for real-time monitoring. Blood tests may overlook localized immune changes, and biopsies can be invasive and limited in their representativeness. Consequently, there's a significant gap in understanding how individual patients respond to immunotherapy, which can lead to ineffective treatment strategies. Moreover, predicting patient sensitivity to therapy remains a challenge. The need for improved methods to capture and analyze immune cells in real-time has become increasingly urgent, as personalized approaches to immunotherapy hold the potential for better management of cancer and enhanced patient survival rates.

INNOVATION

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The innovation involves advanced scaffolds designed to capture and analyze immune cells from circulation, enabling comprehensive monitoring of immune responses to immunotherapy. By integrating these scaffolds into therapeutic workflows, clinicians can assess immune activity in real-time, providing critical insights into therapy efficacy. This approach allows for the analysis of gene expression changes following treatment initiation, identifying which patients are likely to respond favorably or resist therapy based on pre-treatment signatures. The technical advances include enhanced sensitivity for detecting immune cell activity and a streamlined method for evaluating treatment outcomes. Potential applications range from personalized cancer therapies to improved clinical decision-making and research into immune dynamics, ultimately fostering a more tailored approach to cancer treatment and enhancing patient care.