Nanoparticle Therapeutic Vaccines for Cancer Treatment

Tech ID: 33994 / UC Case 2025-764-0

BRIEF DESCRIPTION

A cutting-edge vaccine delivery platform that enhances tumor treatment by co-delivering MHC class I and II restricted antigens.

FULL DESCRIPTION

This technology represents a novel approach in the field of immunotherapy, specifically designed to combat aggressive cancers such as melanoma and colon carcinoma. By utilizing nanoparticles to simultaneously deliver both MHC class I and II restricted tumor antigens, this platform aims to induce a more potent and specific anti-tumor immune response. This method addresses the limitations of current cancer treatments by focusing on the activation and persistence of cytotoxic T cells, thereby offering a promising strategy for the treatment of persistent cancers.

SUGGESTED USES

» Development of more effective cancer vaccines targeting both major T cell subsets for the treatment of melanoma and other aggressive cancers.

» Advancement in immunotherapy approaches by providing a more targeted and sustained anti-tumor immune response.

» Potential for application in a wide range of cancer types, due to the universal strategy of targeting MHC class I and II restricted antigens.

ADVANTAGES

» Improves anti-tumor immune response through co-delivery of MHC class I and II melanoma tumor-associated antigens.

» Enhances treatment efficacy over single-antigen nanoparticles by simultaneously delivering both MHC classes of tumor-associated antigens, demonstrating the importance of dual-antigen design.

» Alleviates severe side-effects associated with current cancer therapies such as radioactive therapy.

PATENT STATUS

Patent Pending

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OTHER INFORMATION

CATEGORIZED AS

» **Biotechnology**
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