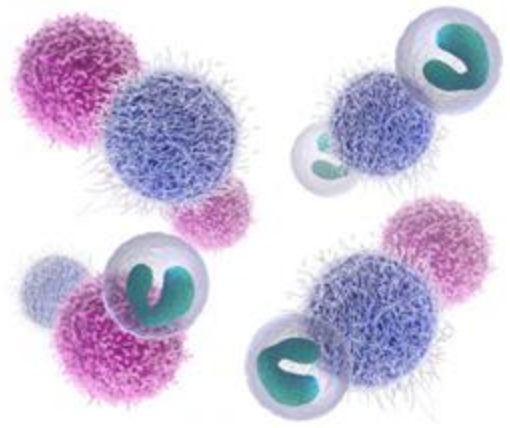
Ex vivo antigen and adjuvant pulsed peripheral blood mononuclear cells as a screening platform for candidate novel vaccines and candidate antigens

Efficacy without Toxicity

Background:

The administration of antigen (Ag)-pulsed dendritic cells (DCs) is a promising strategy to enhance immune responses against tumors and infectious diseases. DCs play a crucial role in initiating and regulating immune responses by presenting antigens to T cells, thereby boosting the body's ability to recognize and fight pathogens or cancerous cells. However, the process of generating or isolating DCs, especially in large quantities and with consistent quality, can be time-consuming, labor-intensive, and costly. These challenges create significant barriers to the widespread use of DC-based immunotherapies, limiting their accessibility and scalability. Therefore, developing more efficient, cost-effective methods for DC generation and antigen loading is essential to make this promising therapeutic approach more practical and available for clinical application on a larger scale.



Source: https://www.biomol.com/products/

Technology:

Using inactivated F. tularensis (iFt) Ag as a model immunogen, scientists at Albany Medical Center have developed a method to determine if DCs could be replaced with peripheral blood mononuclear cells (PBMCs) during the ex-vivo pulse phase and still provide protection against Ft infection.The novel vaccine platform shows promise as means to screen vaccine and adjuvant combinations and may also be used to allow for adjuvants that are otherwise unsafe for use in humans as the adjuvant may be removed prior to prophylactic administration of the pulsed PBMCs.

Intellectual Property

US11422127B2, WO2018106849A1

Technology Readiness

Available for Licensing
Ready for stage 1 clinical trials

Advantages:

- **Cost-Effectiveness**
- **Reduced Complexity**
- **Scalability**
- **Enhanced Protective Immunity**
- **Multi-Organism Vaccine Platform**
- **Improved Medical Therapy**

Applications:

- **Cancer Immunotherapy**
- **Broad Vaccine Applications**
- **Intranasal Immunization Routes**

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