



Polymeric Nanoparticle Adjuvants to promote cellular immunity against cancer and infection

Overview

Vaccination is the most effective intervention to prevent infectious diseases. In recent years the potential of vaccination to enhance protective immunity against cancer has also become clear. Over recent decades vaccine development has increasingly moved from whole microorganisms to microbial 'subunits'. However, these are generally insufficient to activate the potent responses needed for protection. To solve this problem, an additional component called an adjuvant is incorporated with the antigen in the vaccine. The function of this adjuvant is to help the immune system mount a stronger response to the antigen. One limitation has been a lack of adjuvants that safely promote the cellular immune responses required to protect against cancer and intracellular pathogens including viruses.

Technology

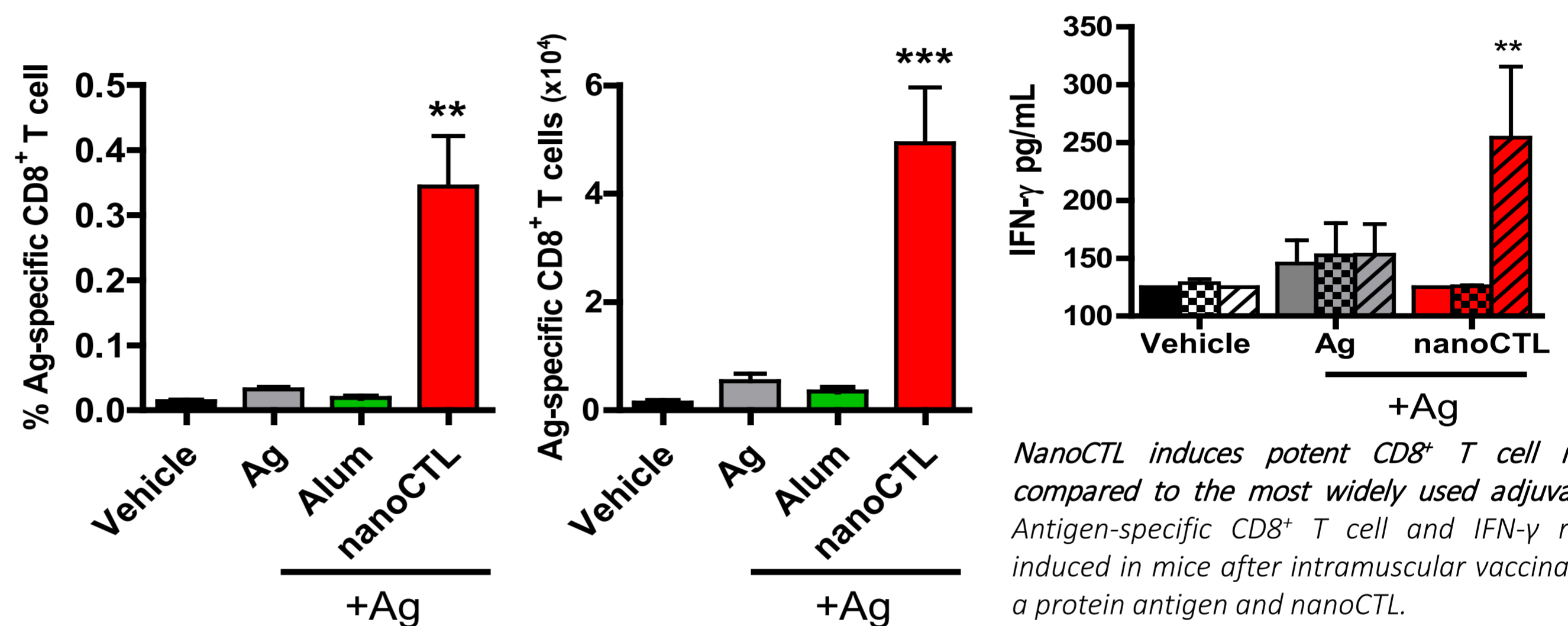
The team at Trinity College Dublin have identified a biocompatible and biodegradable nanoparticle (**nanoCTL**) that can be used as an adjuvant to promote the cell mediated (CD8 and Th1) immune responses required for protection against cancer and intracellular pathogens.

The **nanoCTL adjuvant** technology overcomes well documented disadvantages of other polymeric nanoparticles which have been tested as vaccine adjuvants. The nanoparticles do not require co-adjuvants or complex encapsulation and demonstrate a clear competitive advantage in terms of simplicity of formulation.

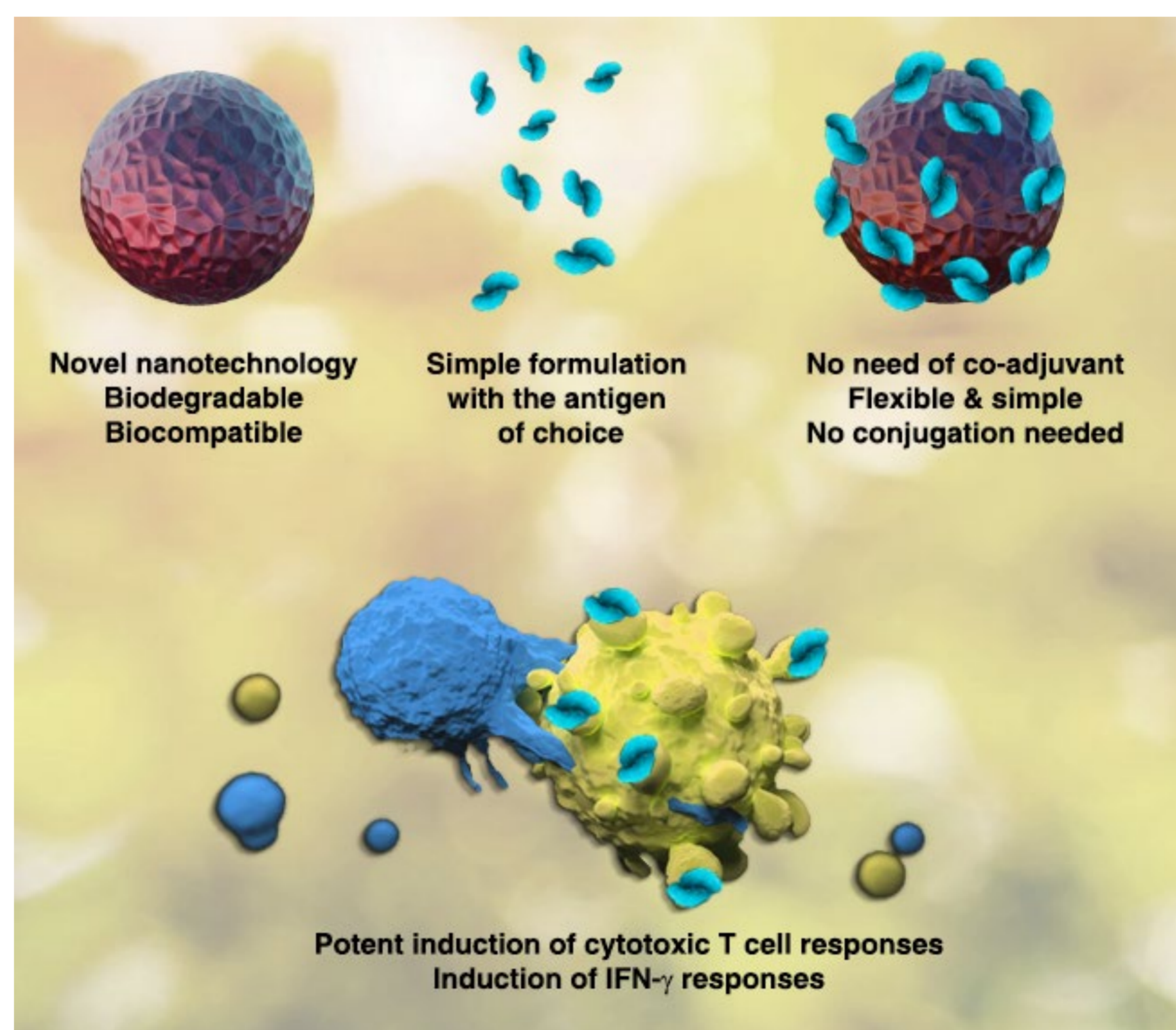
Technology and Patent Status

A priority patent had been filed at the UK patent office in December 2019.

Patent application number
GB1918963.8



NanoCTL induces potent CD8⁺ T cell responses compared to the most widely used adjuvant alum. Antigen-specific CD8⁺ T cell and IFN-γ responses induced in mice after intramuscular vaccination with a protein antigen and nanoCTL.



The opportunity

Trinity College is seeking to collaborate and/or licence the technology to a pharmaceutical company for development and commercialisation.

Market

Vaccine adjuvants, therapeutics

IP Status

Priority Application filed

GB1918963.8

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Opportunity

Research collaboration,

Available to license

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