BioSpectrum
the business of Bio & Health Sciences
ASIA EDITION

World's first Nano cellular broad-spectrum COVID-19 vaccine developing in Australia

08 September 2021 | News

No refrigeration needed; Effective against mutant strains and immunocompromised patients; No added stabilizersor chemicals

EnGeneIC Limited, an Australian, Sydney-based biotechnology company, has developed a globally unique nano cellular technology that in pre-clinical animal studies has been shown to stimulate a broad and powerful anti-COVID-19 immune response and also neutralises the known mutant COVID-19 viruses of concern, particularly the delta variant.

EnGeneIC has commenced a Phase I clinical trial in Melbourne using its patented nanocell technology platform (EDV™; EnGeneIC Dream Vector). The trial will test for safety and a plethora of anti-COVID-19 immune responses.

The EDVs have been packaged with three unique molecules,

a) one that produces the COVID-19 virus Spike protein in the EDV nanocell, thereby stimulating a strong antibody response,

b) a second molecule that simultaneously triggers the activation of important cells of the immune system, involved in virus-fighting, and

c) a third molecule that transforms the anti-virus antibody response into “high affinity” Velcro like antibodies that neutralise the mutant COVID-19 viruses.

COVID-19-EDV pre-clinical studies showed effectiveness against major variants being alpha (U.K.), beta (South African), gamma (Brazil) and critically the delta (Indian) variant. A seminal publication on the preclinical studies is in preparation for a major scientific journal.

The approach is also effective on patients with late-stage cancer in the company’s cancer clinical trials that have responded to EDV treatment with the development of a robust immune response even though they have a severely compromised immune system. Additionally, being able to produce antibodies is only part of the story, as an anti-cancer and anti-viral immune response requires the induction of chemicals called interferons to activate the patient’s own virus-fighting T cells and to create a memory antibody response, including improved anti-cancer immunity for those with end-stage cancers.

It has also proven efficacy in patients with auto-immune diseases, chronic diseases, or even older individuals who have a degree of immune deficiency. Ground-breaking results show activation of healthy white blood cells (immune cells) in vulnerable patients. A US-based hospital conglomerate is working with EnGeneIC to expedite a clinical trial in the United States to test the COVID-19-EDV in this same immune-compromised group.

EnGeneIC's COVID-19-EDV vaccine is stored at room temperature and currently has a shelf life of over three years, making it easily transportable to rural and remote regions throughout the world. Importantly there are no chemical additives or stabilisers in the COVID-19 EDV vaccine.