

Defence Therapeutics Accum(TM) Boosts by 9-Fold the Delivery Effectiveness of the CRISPR/Cas9 Protein to Target Cells

Vancouver, British Columbia--(Newsfile Corp. - December 13, 2021) - Defence Therapeutics Inc. (CSE: DTC) (FSE: DTC) (OTC Pink: DTCFF) ("**Defence**" or the "**Company**"), a biotechnology company focused on the development of vaccines and therapeutics against cancer and infectious diseases, is pleased to announce that its AccumTM platform can potently enhance Cas9 delivery in target cells, which would have a significant positive impact on the CRISPR industry.

The CRISPR technology offers the potential to transform medicine, enabling both the treatment or prevention of many illnesses by deleting or inserting genes in a targeted manner. This technology is central to the biotech industry as it can be used to treat multiple illnesses such as cancer, viral diseases (HIV and Hepatitis B) as well as several genetic disorders. The essence of this technology is simple and requires two important tools: 1) a piece of genetic material to guide the editing process, and 2) the co-delivery of a Cas protein to cut/edit the DNA. Of all the Cas protein currently identified, Cas9 is the most widely used by scientists as it can easily find and bind to almost any desired target sequence, simply by giving a piece of RNA to guide it in its search.

Delivery of the Cas9 protein instead of a DNA-encoding sequence gives the advantage of decreasing off-target activity of Cas9. The current and existing protein delivery tools available today are inefficient at delivering proteins inside the nucleus of target cells. More specifically, any delivered protein ends-up being entrapped and degraded within small endosome-lysosome vesicles. Consequently, the pool of cytosolic Cas9 is low in magnitude making it difficult to reach the nucleus for efficient DNA editing activity. As such, multiple deliveries have to be attempted to reach enough nuclear Cas9 material.

The AccumTM platform is designed to accumulate a given molecule in target cells. The Defence team has tested AccumTM's ability to improve Cas9 delivery to cells. The obtained results, with only a single AccumTM dose and without any added use of a complex lipid formulation, are astonishing. The accumulation of AccumTM-linked Cas9 inside the nucleus of the cells was at least 9-fold higher of the free Cas9 when added to mammalian cells *in vitro*.

"We successfully provide another strong example of how versatile and powerful AccumTM is for delivering proteins of crucial importance. This observation is key to Defence as it's paving the path to strategic partnerships with major pharmaceutical companies in the field looking to improve their CRISPR/Cas9 editing approach," says Mr. Plouffe, CEO of Defence Therapeutics.

With such amazing data in hand, Defence will actively be looking to partner with major players in the field in order to move forward on CRISPR-based treatments designed for specific indications.

As per the report published by Fior Markets, the global gene editing market is expected to grow from USD 4.2 billion in 2020 to USD 13 billion by 2028, at a CAGR of 15.2% during the forecast period 2021-2028.

About Defence:

Defence Therapeutics is a publicly-traded biotechnology company working on engineering the next generation vaccines and ADC products using its proprietary platform. The core of Defence Therapeutics platform is the ACCUMTM technology, which enables precision delivery of vaccine antigens or ADCs in their intact form to target cells. As a result, increased efficacy and potency can be reached against catastrophic illness such as cancer and infectious diseases.

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