



A Gene Gun for **Electrical Delivery**



The Problem

Presently the most widely employed micro projectile gun methods involves the use of gas-driven acceleration to launch high velocity DNA coated gold or titanium micro particles which puncture and penetrate cells.



The Solution

Our innovative, very promising gene gun technology can be made more accessible by eliminating the need for an external gas source and incorporating the use of less costly delivery agents. In a nutshell, our cutting-edge invention is less expensive and more useful.



The Commercial Benefit

- Our gene gun:
- Is electrical based rather than pneumatic based, thus eliminating the gas infrastructure requirement.
- Is significantly more compact, portable and easier to use.
- Uses less expensive projectile particles that can be delivered in a range of sizes from micro to nano.
- Reduced shock to cells as a result of particle delivery.
- Has a disposable barrel enabling one-time use
- Eliminates the risk of cross-contamination.
- Has the ability to further manipulate transfected cells.



Market Potential

Cancer Gene Therapy Market size was USD 805.5 million in 2015, with 20.7% CAGR estimation from 2016 to 2024. The rising prevalence of cancer is expected to increase the demand for gene therapy. In accordance with WHO, the number of new cases is projected to rise by 70% in next two decades. The tremendous growth in number of patients should fuel the industry growth.



Target Markets/Industries

- Therapeutic market – drug delivery
- Cancer gene therapy market
- Genetic modification market



Intellectual Property

Patent pending



Team: Primary Inventor

Prof. Orit Shefi

Prof. Orit Shefi is a member of the Nano Medicine Center at the Institute of Nanotechnology and Advanced Materials (BINA), and an Associate Professor in the Faculty of Engineering.

Prof. Shefi has developed novel technologies for gene and drug delivery to study neurodegenerative diseases, and neuronal and skin regeneration.

Prof. Shefi's research has the potential to provide important new insights that may help to enhance neuronal recovery post trauma.



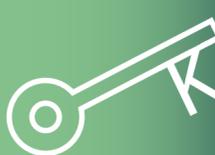
Future Research

The gene gun therapeutic use is being investigated with an eye to incorporating the gene gun in future therapeutic applications such as for DNA vaccines and others. MANY markets could potentially be interested in a technologically improved, easier and cheaper to use gene gun.



The Opportunity

We are looking for investors that are willing to support the research and commercialize the developed IP.



Keywords

- Gene gun,
- Electrical gene gun,
- Cell transformation,
- Drug delivery
- Projectile particles