

ZERA-nucleic acid vaccines are compatible with the intrinsic advantages of nucleic acid vaccines.

ZERA-nucleic acid vaccines have been developed by ZIP and further validated in collaborations with partners, through their implementation for different indications.

ZERA MICROPARTICLES (MPs), generated upon expression of the sequences administered as vaccine, consists of structurally organized antigens, mimicking a viral pattern. ZERA MPs have been shown to drastically improve the immunogenicity of antigens, even those that are poorly immunogenic.

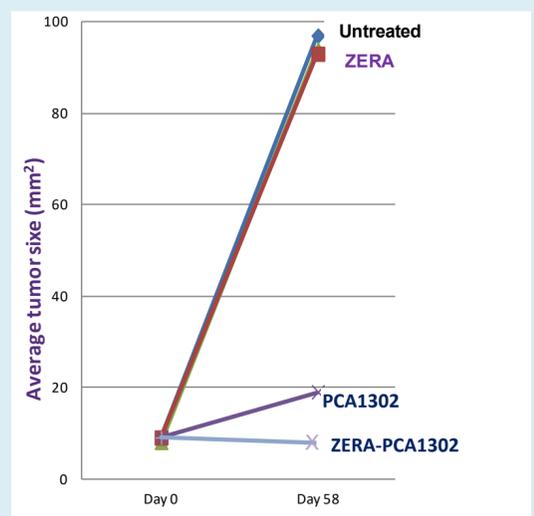
Nucleic acid ZERA vaccines:

- Antigens are expressed and accumulated at high levels: **DEPOT EFFECT**
- Antigens, organized in PBs, are highly stable and slowly processed by antigen presenting cells: **SLOW RELEASE**
- **Induce significant cellular and humoral immune responses**, both promoted by the characteristics of ZERA-based MPs
- Compatible with Recombinant protein ZERA vaccines for **heterologous prime-boost** regimen

ZERA has shown to be an optimal platform for the development of vaccines, based on nucleic-acid formulations. The R&D performed internally had the main objective of identifying the differential characteristics of ZERA-based vaccines in comparison with canonical nucleic acid vaccines. To do so, clinically relevant indications have been tested, both for animal and human health, and preclinical immunological performance has been assessed.

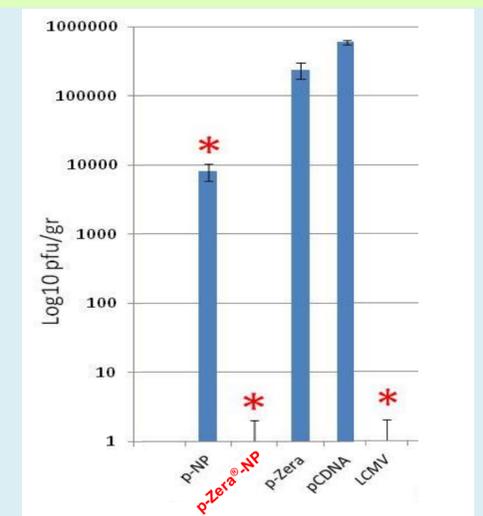
All the results generated, as well as all the molecules tested, are available for evaluation of licensing opportunities. Zera is available for performance evaluation in any indications.

**Zera-PCA1302 DNA
Tumor regression assay**



Complete tumor regression in a prostate cancer model, when administered with a therapeutic Zera DNA immunotherapy, based on a specific prostate cancer associated antigen

**LCMV
Zera-NP DNA plasmid**



Complete virus clearance of a viral mouse model, pre-treated with a DNA Zera-Ag vaccine (NP).

Programme	Discovery	Preclinical
Recombinant Zera Vaccine		
Classical Swine Fever Virus	████████████████████	████████████████████
Porcine reproductive and respiratory syndrome virus	████████████████████	████████████████████
Porcine Circovirus	████████████████████	████████████████████
Prostate cancer immunotherapy	████████████████████	████████████████████
Nucleic Acid Zera Vaccine		
Prostate cancer immunotherapy	████████████████████	████████████████████
Human Papilloma Virus	████████████████████	████████████████████