

A next-generation BCG vaccine to prevent tuberculosis in Asia

■ Researchers

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■ Research Seeds

- The novelty and strengths of this research
 - Diverse **collections of M. tb and BCG strains** x **ABSL3 facility**
 - **A new generation BCG developed** by recombinant BCG technique based on BCG-Tokyo strain
- New technologies and animal models
 - The technique for genomic integration that enables **stable expression** of foreign antigens.
 - Two mouse models mimicking human pulmonary tuberculosis and secondary tuberculosis pathology
 - The macaque model of tuberculosis infection enhanced translational relevance to humans
- Major Achievements
 - Established **Proof of Concept (PoC)**
 - Filed patent application (PCT application to be filed)

■ Background

- **Tuberculosis is the leading cause of death among infectious diseases worldwide.**

- **The highly virulent Beijing strain is prevalent in Asia.**

BCG
(Since 1921)



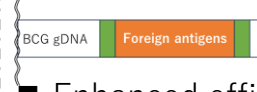
Mismatches with current drug modalities

- Challenges inherent to live vaccines
- Insufficient pharmaceutical stability

- **Enhance efficacy to reduce dose and improve safety & stability**

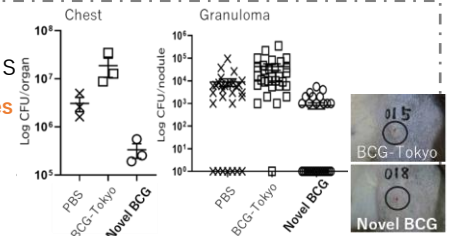
■ Research Overview

- Development of novel recombinant BCG with stable expression of foreign antigens



Introduction of multi transgenes
Disrupt genes causing reduced efficacy

- Enhanced efficacy at low dose with confirmed safety (Macaque model)



■ Next Steps

- Entering the stage of conducting non-clinical trials.
- We would like to conduct a pilot production run at a GMP facility in preparation for the clinical trial.
- Pursuing large-scale funding for vaccine research