

### Technology's description

Plague is still a public health problem in the world and is considered as a re-emerging disease. *Yersinia pestis*, the causative agent, is also considered as a potential biological weapon, but no efficient vaccine is available.

The pneumonic plague is considered at high risks to initiate outbreaks. Antibiotic treatment is not sufficient to control plague, and resistant strains have recently emerged. The residual plague mortality in endemic countries remains around 10 %.

Researchers from the Pasteur Institute are developing an oral delivery vaccine, based on a live attenuated *Y.pseudotuberculosis* expressing important antigenic *Y.pestis* peptides. Recent study using this vaccine shows 100% protection against bubonic and pneumonic plague in mice with a single dose. Preliminary humoral and cellular response has been successfully observed.

### Advantages

- Currently no safe and efficient vaccine
- Induce systemic and mucosal immunity
- Rapid and low production cost
- Live vaccines: don't need adjuvant, prolonged stimulation of the immune system
- The research unit is a WHO collaborating center on plague

### Intellectual property

Patent

### Development level

Technology validated in lab



### Applications

- Vaccine against bubonic and pneumonic plague

### Technology transfer

- License

