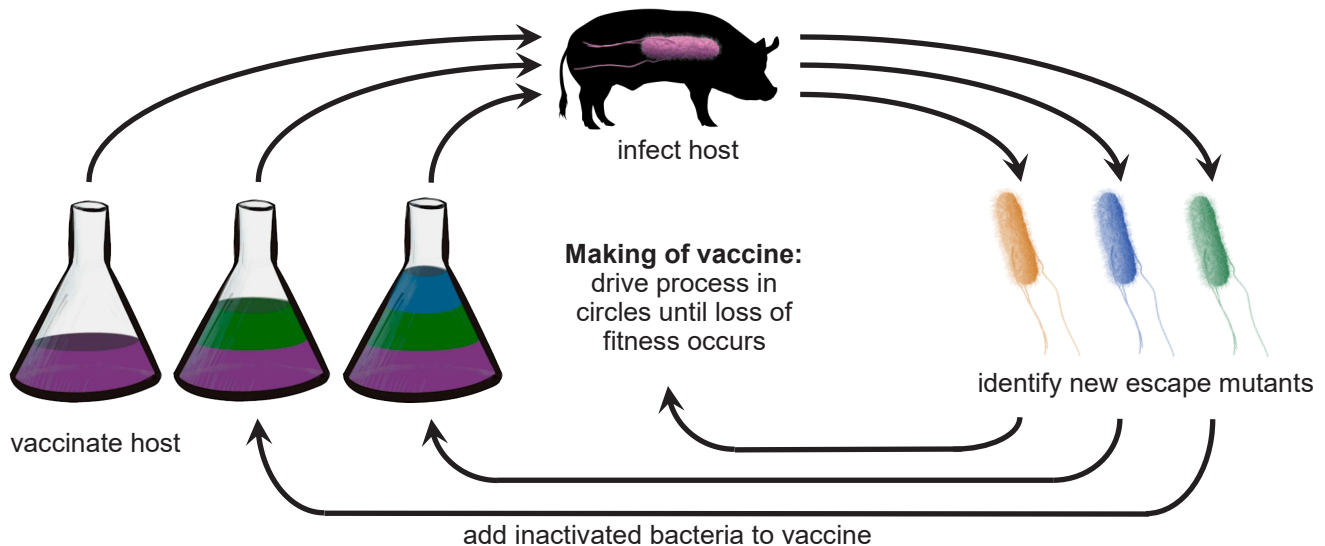


## Licensing Opportunity

### Safe and effective *Salmonella* vaccine for application in livestock rearing



#### Summary

This novel vaccine protects effectively against *Salmonella*. It has a high potential to prevent bacteria transmission, and thus, the spread of the disease in livestock.

#### Background

The non-Typhoidal *Salmonella* are a primary cause of foodborne illnesses worldwide. Presently, no successfully licensed vaccines for either human or large-animal use against these bacteria are on the market since the bacteria typically escape a targeted immune reaction by quickly evolving into new variants.

#### Invention

This inactivated oral vaccine drives the evolution of *Salmonella* Typhimurium in the gut into a dead-end. In order to escape the secretory antibody response the bacteria produce escape variants with reduced-length O-antigen. O-antigen is the long repetitive sugar portion of lipopolysaccharide that thickly carpets the surface of all *Salmonella enterica* subspecies. Bacteria with such a modified surface display a major loss of fitness and attenuation of virulence in naïve hosts. The vaccine was successfully tested in a mouse model. Vaccination studies in pigs are currently ongoing.

#### Features & Benefits

- Effective vaccine against rapidly evolving *Salmonella* serovars and potentially other Gram-negative bacteria
- Oral administration
- Low cost of production and easy to store

#### Fields of Application

- Livestock rearing
- Veterinary medicine

#### Patent Status

- Patent pending

#### Publication

- M. Diard et al. "Rationally designed oral vaccines can set an evolutionary trap for *Salmonella* Typhimurium", bioRxiv preprint, October 31, 2019, <https://doi.org/10.1101/824821>

#### Technology Readiness Level



#### ETH transfer

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