Protective Epitope Polypeptide Bacterial Vaccines

UA ID Technology #ua18-031

**Title:** Vaccine Polypeptide Compositions and Methods

**Invention:** This invention is a bacterial vaccine capable of delivering protective peptides as fusion polypeptides and inducing a antibody response against an infectious organism. This is a platform methodology that can be utilized for multiple types of infections and has first been demonstrated to work against *Bordetella pertussis*. *Bordetella pertussis* is a gram-negative bacteria that causes Whooping Cough, a particularly dangerous disease in children. *Bordetella pertussis* is only one disease in which these fusion polypeptides could be beneficial.

**Background:** Whooping Cough is a highly contagious disease that often affects children. While there is a vaccine available for this disease, occurrences of Whooping Cough have begun to increase in recent years. This is likely due to bacterial adaptation of the vaccine along with the failure of the vaccine to last long enough to provide protection. In 2016, 17,972 cases of Whooping Cough were reported in the US alone. As cases of Whooping Cough, and other diseases increases, these protective polypeptide vaccines will allow for a new form of protection.

**Applications:**

- Vaccines
- Pharmaceutical
- Treatment of Whooping Cough

**Advantages:**

- Highly efficient
- Inexpensive
- Immunoprotective
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