A *Salmonella* Poultry Vaccine for the Prevention of Food-Borne Illness

**APPLICATION AREAS**
Live Vaccine for Poultry to Prevent Fecal Shedding and Egg Transmission of *Salmonella* spp.

**ABSTRACT**
*Salmonella* bacteria are responsible for causing a large number of food-borne illnesses every year. Salmonellosis caused by *S. enteritidis* present in eggs is among the most important food-borne public health hazards attributed to this group of organisms. Most outbreaks have been traced to the consumption of insufficiently cooked eggs, which can become contaminated in the ovaries, oviduct and isthmus of infected hens. However, *S. enteritidis*-infected hens usually show no signs of disease, and can remain carriers for extended periods of time; the bacteria can also be spread to other chickens via fecal shedding. To prevent transmission of *Salmonella* among chickens and through eggs and consequently reduce human illness, Iowa State University researchers have developed a heterophil-adapted poultry vaccine. After serial passage through poultry heterophils, vaccination of hens with this live attenuated vaccine has been demonstrated to eliminate egg transmission in challenge studies using wild-type strains, in addition to reducing the frequency and duration of fecal shedding.

**PUBLICATION(s)**

**BENEFITS**
- Eliminates egg transmission of *Salmonella* spp. in vaccinated hens.
- Reduces frequency and duration of *Salmonella* fecal shedding in vaccinated hens.
- Can be easily administered in drinking water.

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**INTELLECTUAL PROPERTY STATUS (August--2007)**
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