



Subunit Vaccine for Virulent Infectious Bursal Disease Virus

The Challenge: Infectious Bursal Disease Virus (IBDV) is the causative agent of Gumboro Disease, an infectious disease of global economic importance in poultry. This disease affects 3 to 6 week old chickens. Pathologically, this disease is characterized by early atrophy of the bursa. The infected bursa becomes swollen, hemorrhagic and then quickly regresses to a small size leading to suppression of the immune system. Affected birds are susceptible to a variety of infectious agents including *E. coli*, *Staphylococcus* and *Clostridium*. IBDV is rapidly spread by direct contact between birds and it can survive for extended periods of time outside of the host in objects such as contaminated feed. No known chemotherapeutic or antibiotic agent is effective in the treatment or control of IBDV. Therefore, an assessment of immune status, as well as serologic identification of IBDV, would significantly enhance the ability to control this disease.

UMBI Solution: Previously, expression of IBDV-like particles in a baculovirus insect cell system has led to limited protein production. In recent years, there has been an increasing need for developing a new system suitable for large scale production of IBDV-recombinant proteins. A UMBI inventor has developed a new method for IBDV-VP2 viral protein production in yeast. The UMBI inventor has shown that the yeast-derived VP2 can form subviral particles (SVPs) and can serve as an antigen in serological tests leading to reduced costs in reagents and increased number of samples to be screened.

Commercial Applications:

- VP2 recombinant protein is expressed in properly folded form to make SVPs of 20nm, which can be used as an antigen for vaccines and serological/diagnostic tests

Advantages:

- Overcomes large scale production limitation of prior baculovirus insect cell system production
- Can be easily produced in a large quantity

Stage of Development: Reduced to practice

Patent Status: Not patented, -Tangible research property

Licensing Potential: UMBI is seeking a non-exclusive or exclusive biological material licenses for this technology. The inventor would welcome the opportunity to work with any licensee to further refine or extend the capabilities of this invention.

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