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TECHNOLOGY BRIEF

Gene Transfer System for Insects

The Challenge: Insect cell culture technology is mainly used for the large scale production of exogenous proteins. Therefore, the preparation of transgenic, recombinant insect cell lines, and insects continues to be an object of substantial commercial interest. Currently, most insect cell expression systems are transient and are based on baculovirus infection. In some instances, stable integration of the target gene into the host genome is more advantageous as it allows for the continuous (stable) protein expression in insects and insect cell lines. Such homogenous cell populations that express the target protein can be used for efficient expression and to scale up production of the desired protein.

UMBI Solution: Transposable elements are small sequences of DNA that can move around to different regions within the genome of a single cell. They are abundant however, very few have been isolated from eukaryotes. Using a specific transposable element called Herves, UMBI scientists have developed a novel expression system and genetic vector that can be useful for achieving continuous higher transformation frequencies in insect cells, and other species, including use in human gene therapy.

Commercial Applications and Advantages:

- A novel gene transfer system for large scale protein production
- Research tool for protein function/structure studies

Stage of Development: Reduced to Practice

Patent Status: US Patent Number 5,614,398

Licensing Potential: UMBI is seeking exclusive or non-exclusive licensees to part or all of this technology. The UMBI inventors would welcome the opportunity to collaborate with any licensee to further refine this invention or extend its capabilities.

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