

## BAC-2-THE-FUTURE: AN IMPROVED SYSTEM FOR PRODUCTION OF RECOMBINANT BACULOVIRUS

### SUMMARY (1024-CHARACTER LIMIT)

The National Cancer Institute (NCI) seeks licensing of Bac-2-the-Future, an improved system for the production of recombinant baculovirus.

### NIH REFERENCE NUMBER

E-287-2012

### PRODUCT TYPE

- Research Materials

### KEYWORDS

- Baculovirus, Protein Production, B2F, Bac-2-the-Future, Insect Cells, Esposito

### COLLABORATION OPPORTUNITY

This invention is available for licensing.

### CONTACT

- John D. Hewes  
NCI - National Cancer Institute

240-276-5515

[John.Hewes@nih.gov](mailto:John.Hewes@nih.gov)

### STATUS

Active

### DESCRIPTION OF TECHNOLOGY

Baculoviruses have been used for decades to produce proteins in insect cell hosts. Current systems for generating recombinant baculovirus have several shortcomings which prevent their easy use in high-throughput applications.

Researchers within the Frederick National Laboratory for Cancer Research have developed an improved system called Bac-2-the-future, or B2F, to quickly and efficiently generate recombinant baculoviruses which produce recombinant proteins. In the new system, the baculovirus transfer vector, transposition helper plasmid, and E. coli strain carrying the bacmid DNA were modified to eliminate the need for screening positive clones and improve the efficiency of baculovirus production. Taken together, these improvements permit facile high-throughput recombinant baculovirus production at reduced cost and

improved speed over the currently available systems. The new transfer vectors and E. coli strains of the B2F system are available for licensing.

### POTENTIAL COMMERCIAL APPLICATIONS

- High-throughput protein production
- Generation of virus-like particles in insect cells

### COMPETITIVE ADVANTAGES

- Elimination of background plasmid DNA during recombinant baculovirus production
- Elimination of nonproductive transposition events leading to false positives
- Lower cost production of baculovirus
- Increased speed of baculovirus production (allowing high-throughput production with limited screening)
- Higher efficiency cloning of baculovirus constructs

### INVENTOR(S)

[Dominic Esposito Ph.D. \(NCI\)](#)

### DEVELOPMENT STAGE

- Prototype

### PUBLICATIONS

Mehalko JL, et al. Engineering the transposition-based baculovirus expression vector system for higher efficiency protein production from insect cells. [[PMID 27616621](#)]

### PATENT STATUS

- **Research Material:** NIH will not pursue patent prosecution for this technology

### RELATED TECHNOLOGIES

- E-164-2011

### THERAPEUTIC AREA

- Cancer/Neoplasm
- Infectious Diseases
- Immune System and Inflammation
- Eye and Ear, Nose & Throat
- Hormonal Systems, Endocrine, and Metabolic Diseases
- Cardiovascular Systems
- Gastrointestinal
- Kidney and the Genitourinary

- Musculoskeletal
- Reproductive
- Skin and Subcutaneous Tissue
- Metabolic Disease