Transposon Vector for Vertebrate & Invertebrate Genetic Manipulation

Tech ID: 25287 / UC Case 2012-608-0

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	9,790,477	10/17/2017	2012-608

IMAGES

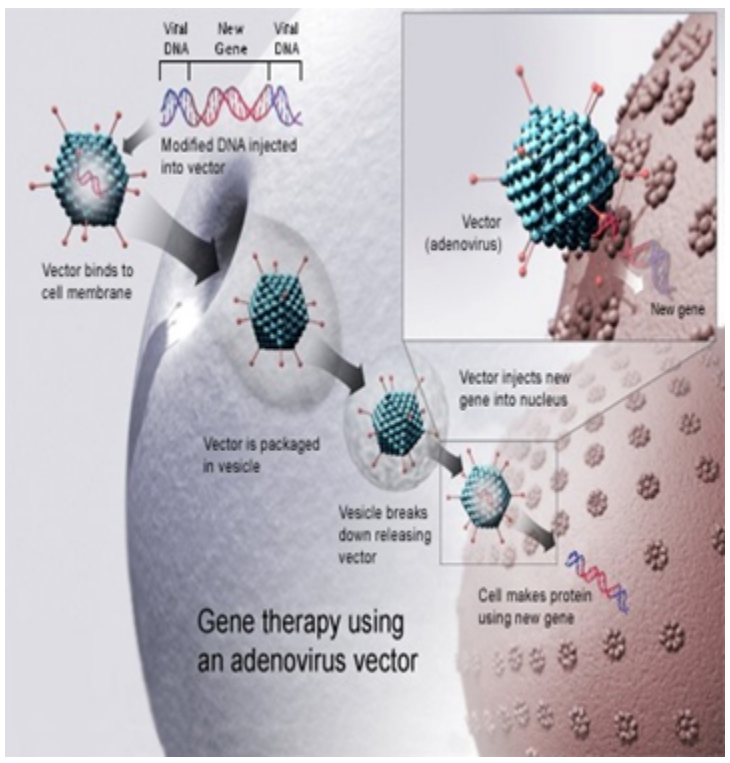

Photo by NIH

BRIEF DESCRIPTION

Background:

Therapeutic delivery of genes is a rapidly evolving technique used to treat or prevent a disease at the root of the problem. The global transgenic market is currently $24B, growing at an annual projected rate of 10%. Currently, a variation of this technique is widely used on animals and crops for production of desirable proteins, but this is a heavily infiltrated market. Thus, entering the gene therapy segment is more promising and would enhance the growth of this industry.

Brief Description:

UCR Researchers have identified a novel transposon from *Aedes aegypti* mosquitoes. This mobile DNA sequence can insert itself into various functional genes to either cause or reverse mutations. They have successfully developed a transposon vector system that can be used in both unicellular & multicellular organisms, which can offer notable insight

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OTHER INFORMATION

KEYWORDS

transposon, transposable elements, transgenic technology, genetic tool, gene therapy, genetic manipulation, mobile DNA, transposon vector system

CATEGORIZED AS

- **Biotechnology**
  - Health
- **Medical**
  - Delivery Systems
  - Disease: Autoimmune and Inflammation
  - Disease: Cancer
  - Disease: Central Nervous System
  - Disease: Dermatology
  - Disease: Genetic Diseases and Dysmorphic Syndromes
  - Disease: Metabolic/Endocrinology
  - Disease: Musculoskeletal Disorders
  - Gene Therapy
  - Therapeutics
- **Research Tools**
  - Animal Models
  - Expression System
  - Nucleic Acids/DNA/RNA

RELATED CASES

2012-608-0

to improve current transgenic technologies as well as methods of gene therapy.

ADVANTAGES

- Various types of vectors – introduce transposons to targeted areas in different organisms
- Successful creation of transgenic animals – genetic transformations in vertebrate and invertebrate cells

APPLICATIONS

- Research tool for transgenic technology – produce therapeutic proteins or disrupt gene function, e.g. transform mosquito genes to minimize spread of arboviral disease
- Gene therapy – alter genes to treat or prevent genetic problems

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