Transposon Vector for Vertebrate & Invertebrate Genetic Manipulation

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

Application area

Research tool for transgenic technology– produce therapeutic proteins ordisrupt genefunction, e.g. transform mosquito genes to minimize spread ofarboviraldisease
Gene therapy –alter genes to treat or prevent genetic problems

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

Institution

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