

Retrovirus Packaging Cell Lines Based on Gibbon Ape Leukemia Virus

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Technology description

Gene therapy and gene transfer have recently been recognized as effective therapeutic tools to combat diseases. Accordingly, market demands for vectors and carriers to facilitate such interventions have surged in recent years. Retroviral vectors provide an efficient and safe means of gene transfer to eukaryotic cells. The present invention relates to genetic engineering involving retrovirus packaging cells that produce retroviral vectors. Specifically, the invention involves the expression plasmids encoding the envelop glycoproteins of a family of primate type C retrovirus, namely, the Gibbon Ape leukemia virus (GALV). Recombinant vectors derived from murine leukemia virus (MLV) have been widely used to introduce genes in human gene therapy clinical trials. A key determinant for their use in clinical gene therapy is the availability of packaging cell lines capable of producing large amounts of virus with identical titers. The present invention describes the packaging cell lines that produce MLV-based gene transfer vectors with the envelope from gibbon ape leukemia virus. Retroviral vectors produced are of high titer and have an expanded host range providing a means for gene transfer to a wide range of animal species. The gene transfer vectors produced are non-infectious and there was no evidence of production of helper virus, making these vectors safe.

Advantages

These cell lines are critical for producing large amounts of standardized vector necessary for efficient for in vivo and ex vivo gene transfer. Therefore, this invention has a significant commercial application as a tool in the development of diagnostic and therapeutic interventions related to gene transfer and gene therapy.

Institution

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