

Retroviral Packaging Cell Line

Inventors:

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Applications:

Gene Therapy

Produces high titers of pseudotyped retroviral particles capable of transducing nondividing cells.

This invention describes a packaging cell line that produces retroviral particles, especially pseudotyped particles at a higher titer than conventional packaging cell lines. An advantage of the invention is that packaging cell lines can be produced that contain an envelope-encoding nucleotide sequence stably integrated in the cell's genome, which sequence can be inducibly expressed, thus allowing generation of packaging cell lines capable of expressing an envelope protein that is otherwise toxic to the host cell. Also, the packaging cell lines do not have the potential to produce replication competent retroviruses. The inventors have developed HIV vectors that can transduce nondividing cells. The HIV vector was pseudotyped with the vesicular stomatitis virus G glycoprotein to ensure a broad host range and facilitate concentration of virus to high titers. HIV vectors mediate efficient and stable transduction of post-mitotic cells in brain, liver, muscle and retina. Recently, the inventors were able to show that a lentiviral vector based on HIV was able to transduce human CD34+ cells capable of stable, long-term reconstitution of non obese diabetic/severe combined immunodeficient (NOD/SCID) mice. This opens the way for human gene therapy using human hematopoietic stem cells.

References:

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Foreigns pending

License Terms:

Nonexclusive license negotiable

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