



Method for Increasing Efficiency of Transduction in Targeted Areas

While gene therapy has great potential for providing effective treatment for a wide range of human diseases, procedural limitations have prevented greater success with this technique. A major hurdle in most current gene therapy strategies is the ability to transduce target tissues at high enough efficiencies to lead to expression of the gene of interest at therapeutic levels. Noting the inadequacies of current conventional techniques, University of Florida researchers have developed a novel method designed to increase transduction efficiencies. This technique requires gene therapy viral vectors to be mixed with a gel matrix and applied directly to the target tissue. The gel provides increased exposure time of the target cells to the viral vectors, thus increasing the efficiency of transduction in the targeted areas.

Applications

Useful for all conventional gene therapy protocols which require a means to increase the efficacy of target tissue transduction

Advantages

- ◆ Gel matrix provides increased exposure time for viral vector to transduce target tissue of interest, increasing transduction efficiencies
- ◆ Method is an extremely easy way to increase the efficacy of current gene therapy protocols, ensuring broad applicability of this technique
- ◆ Increased efficacy garnered by this method requires less vector to be used, lowering costs associated with vector production

The Technology

This technology involves the combination of recombinant adeno-associated virus (AAV) vectors with a water-soluble glycerin-based gel. By virtue of the gel matrix, target cells are exposed longer to the viral vector, increasing the efficiency of transduction. This technique is best suited for topical applications; however, it has the potential to be used in a wide variety of other protocols as well. Use of this technology is broadly applicable for increasing the efficacy of current and future gene therapy protocols.

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