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## CAR-Independent Gene Transfer to Accomplish Efficient and Specific Genetic Modification of Target Cells Via Adenoviral Vectors

Adenoviruses have been widely employed for a variety of gene therapy applications, owing largely to their unparalleled efficiency in accomplishing *in vivo* gene transfer. Despite this unique capacity, full use of these vectors for gene therapy applications has been limited by their reliance on target cell entry via the native adenovirus receptor, CAR. On this basis, target cells which express low amounts of CAR are relatively resistant to adenoviral vectors (Ad). Alternatively, recognition of CAR may allow gene transfer via Ad to ectopic target cell sites with attendant toxic/morbid consequences. Thus, the ability to direct adenovirus to cell-specific receptors, in a CAR-independent manner, would potentially allow circumvention of these two key limitations of Ad vectors. To this end, we have endeavored tropism-modifications of Ad to allow cell-specific gene delivery. This has been achieved via heterologous retargeting complexes and via genetic modification of the Ad capsid. Both of these strategies have allowed the achievement of CAR-independent gene delivery to target cells. Further, such CAR-independent gene delivery has allowed the achievement of both cell-specific gene delivery as well as gene transfer efficiency augmentations. On this basis, it is clear that strategies to alter Ad tropism may allow greatly improved utilities of Ad for gene therapy applications.

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1978-1982 M.D., Emory University School of Medicine, Atlanta, GA  
1982-1983 Internship – Medicine, Emory University, Affiliated Hospitals, Atlanta, GA  
1983-1985 Residency – Medicine, Emory University, Affiliated Hospitals  
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1990-1991 Visiting Assistant Professor of Medicine, Division of Pulmonary Diseases, Department of Medicine, The University of North Carolina, Chapel Hill, NC  
1991-1993 Assistant Professor of Medicine, Division of Pulmonary Diseases, Department of Medicine, The University of North Carolina  
1992-1993 Curriculum in Genetics, The University of North Carolina  
1992-1993 Member, Lineberger Comprehensive Cancer Center, The University of North Carolina  
1993-1996 Associate Professor, Department of Medicine, Division of Pulmonary and Critical Care Medicine and Microbiology, The University of Alabama at Birmingham, Birmingham, AL  
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1996-present Professor, Departments of Medicine, Gynecologic Oncology, Pathology and Hematology/Oncology, Senior Scientist, Comprehensive Cancer Center, Center for AIDS Research, Arthritis and Musculoskeletal Diseases Center and Gregory Fleming Cystic Fibrosis Center, The University of Alabama at Birmingham  
1997-present Jeanne and Ann Griffin Chair for Women's Cancer Research, The University of Alabama at Birmingham  
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- Honors  
1992-1993 James W. Woods Junior Faculty Award, University of North Carolina School of Medicine  
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