



## Gene Transfer and Rare Diseases Workshop

National Institutes of Health

September 13, 2012  
Rockville Hilton, Rockville, MD



8:00 AM Welcome and Introductions

### *Session I: Clinical Experience*

#### *Gene Transfer for Rare Diseases: What Are the Challenges and Keys to Success?*

8:15 AM **Hemophilia**  
Katherine A. High, M.D.  
University of Pennsylvania and The Children's Hospital of Philadelphia  
Philadelphia, PA

8:35 AM **Leber Congenital Amaurosis and Other Eye Disorders**  
Samuel G. Jacobson, M.D., Ph.D.  
Scheie Eye Institute  
University of Pennsylvania  
Philadelphia, PA

8:55 AM **Blood Cell Disorders**  
Donald B. Kohn, M.D.  
University of California, Los Angeles  
Los Angeles, CA

9:15 AM **Lipoprotein Lipase Deficiency: European Union Development and Regulatory Experience**  
Carlos R. Camozzi, M.D., Ph.D.  
uniQure B.V.  
The Netherlands

9:40 AM **Panel Discussion**

**Moderator: Donald B. Kohn, M.D.**

#### **Questions**

1. *What are the key scientific challenges in developing clinical protocols for a rare disease?*
2. *How frequently were disease-specific animal models available for these diseases? If there was no appropriate animal model, was this a rate-limiting step?*

3. *Once you have had a clinical success, how do you most efficiently transfer those successful elements into other studies for diseases with a similar phenotype?*

**10:00 AM**

**BREAK**

***Session II: Resources***

***What NIH Resources Are Available, and How Are They Being Used?***

**10:15 AM**

**Gene Therapy Resource Program (GTRP)**

Sonia I. Skarlatos, Ph.D., F.A.H.A.  
National Heart, Lung, and Blood Institute  
National Institutes of Health (NIH)

**10:35 AM**

**Bridging Interventional Development Gaps (BrIDGs)**

John McKew, Ph.D.  
National Center for Advancing Translational Sciences (NCATS)  
NIH

**10:50 AM**

**Genetic Modification Clinical Research Information System (GeMCRIS)**

Robert Jambou, Ph.D.  
Office of Biotechnology Activities  
NIH

**11:00 AM**

**Rare Diseases Clinical Research Network (RDCRN)**

Rashmi Gopal-Srivastava, Ph.D.  
Office of Rare Diseases Research  
NCATS, NIH

**11:10 AM**

**National Gene Vector Biorepository (NGVB)**

Kenneth Cornetta, M.D.  
Indiana University  
Indianapolis, IN

## *Session III: Defining Opportunities for Data Sharing Across Protocols*

**11:30 AM**                    **Preclinical Studies To Support Clinical Applications of Gene Therapy Products**  
Mercedes Serabian, M.S., D.A.B.T.  
U.S. Food and Drug Administration  
Rockville, MD

**11:50 AM**                    **LUNCH**

**12:50 PM**                    **Panel I Discussion**

Moderator: Yuman Fong, M.D.  
Chair, NIH Recombinant DNA Advisory Committee  
Memorial Sloan-Kettering Cancer Center  
New York, NY

### **Lead Panelists**

Ronald G. Crystal, M.D.  
Department of Genetic Medicine  
Weill Cornell Medical College  
New York, NY

Barry Byrne, M.D., Ph.D.  
University of Florida  
Gainesville, FL

Daniel Takefman, Ph.D.  
U.S. Food and Drug Administration  
Rockville, MD

Janet Benson, Ph.D., D.A.B.T.  
Lovelace Respiratory Research Institute  
Albuquerque, NM,

Kenneth Cornetta, M.D.

### **Questions**

- 1. Are there common studies or assays that could produce data that can be shared across different trials involving similar diseases or vectors?*
  - a. What types of preclinical data could be useful for sharing?*
  - b. What are the FDA's and other regulatory agencies' considerations regarding sharing data (e.g., cross-reference letters, platforms)?*

- c. *What are possible mechanisms for sharing? What are the tolerance and limitations for sharing in drug development for academic researchers and biotech/pharma?*
2. *What factors must the studies have in common for shared data to be useful?*
  - a. *For example, would data from biodistribution studies using the same vector backbone still be applicable if the promoter or transgene were changed in the subsequent study but the route of administration was similar?*
  - b. *For studies involving integrating vectors, what factors would need to be considered in determining whether genotoxicity data could be shared?*
  - c. *How useful have the current Ad-5 and AAV-2 reference standards been to the field? Would the development of additional standard reagents be helpful for the field in terms of regulatory review and sharing of data across preclinical studies?*
3. *How is the NGVB toxicology database currently being used? What improvements might encourage increased use of pharm/tox databases that are detailed, readable, and searchable?*
4. *How could the NIH foster data sharing?*

**2:00 PM**

**Panel II Discussion**

**Lead Panelists**

Brian P. Sorrentino, M.D.  
St. Jude Children's Research Hospital  
Memphis, TN

Jeffrey Bartlett, Ph.D.  
Calimmune, Inc.  
Los Angeles, CA

R. Jude Samulski, Ph.D.  
The University of North Carolina at Chapel Hill  
Chapel Hill, NC

**Questions**

1. *Is there a role for developing therapeutic platforms to be used for multiple diseases to maximize the sharing of data and efficiencies in developing new gene transfer studies for rare diseases?*
  - a. *What common characteristics of diseases allow one to develop platforms?*

- b. *What are the considerations for designing a platform for multiple trials involving similar vectors, diseases, and transgenes (e.g., lentivectors for different immunodeficiencies)?*
- c. *Are some of the AAV and lentiviral vectors being used across the field sufficiently similar to be included in a platform?*
- d. *When is the time to consider vector platforms versus continued refinement?*

**3:00 PM**                      **PUBLIC COMMENT**

**3:15 PM**                      **BREAK**

*Session IV: Mechanisms for Advancing Gene Transfer for Rare Diseases*

**3:30 PM**                      **Panel Discussion**

**Moderator:** Yuman Fong, M.D.

**Questions**

1. *How are current resources being used, and are there ways they might be improved to make them more useful to investigators developing protocols for rare diseases?*
  - a. RDCRN
  - b. BrIDGs
  - c. GeMCRIS
  - d. NGVB
  - e. GTRP
2. *Are there particular gaps in available programs that hinder the development of protocols for rare diseases?*
3. *What are the challenges to obtaining funding for preclinical studies to support IND applications in gene transfer for rare diseases?*
4. *Are there regulatory policies that can facilitate data sharing?*
5. *What are the operational needs in data sharing?*
6. *How can the publication of safety data and negative results be encouraged for both authors and journals?*
7. *What are our conclusions from this workshop?*

**5:00 PM**

**PUBLIC COMMENT**

**5:15 PM**

**ADJOURN**