Production Assistance for Cellular Therapies

Educational Web Seminar

Accelerating Your Cell Therapy:

A PACT Program Update

Monday, 11 February 2019

12:00 noon – 1:00 PM ET

Speakers

Lis Welniak, PhD
Director
PACT Program
National Heart, Lung, and Blood Institute, NIH

Robert Lindblad, MD
Principal Investigator and Chief Medical Officer
PACT Program Coordinating Center
The Emmes Corporation

Ann M. Leen, PhD
Associate Professor
Department of Pediatrics
Baylor College of Medicine

David H. McKenna, Jr., MD
Director
Molecular and Cellular Therapeutics Facility
University of Minnesota

Overview

- Collaboration with NHLBI/NIH programs
- PACT program updates– clinical scope, regulatory services, and information on application process
- Examples of 2 previous PACT clinical projects
- Q&A

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PACT - Collaboration

Lis Welniak, PhD
Program Director, PACT
Division of Blood Diseases and Resources
National Heart, Lung, and Blood Institute

PACT - Collaboration

Collaboration

- NIH Regenerative Medicine Innovation Project (RMIP)
- NHLBI Cure Sickle Cell Initiative
- And with other NIH and NHLBI Programs

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CURE SICKLE CELL.

NIH Regenerative Medicine Innovation Project (RMIP)

- 21st Century Cares Act passed in December 2016
- Support for clinical research on adult stem cells
- NIH released 4 funding opportunities, applications were due October 19, 2018
- PACT to offer RMIP awardees:
  - technical and administrative services to assist with FDA regulatory requirements
  - Phase-appropriate manufacturing assistance for the development of their clinical-grade product

Cure Sickle Cell Initiative

CURE SICKLE CELL.

- Launched in September 2018
- To accelerate the development of genetic therapies to cure sickle cell disease
- PACT will support the Cure Sickle Cell Initiative by enabling increased capacity to safely manufacture cellular therapy products through cell processing facilities capable of producing cGMP-grade genetically modified cells
- PACT currently providing regulatory support services to investigators
  - Pre-IND meeting package preparation
  - Pre-IND meeting support

How is the Cure Sickle Cell Initiative contributing to scientific discoveries?

The Cure Sickle Cell Initiative builds on the legacy of NHLBI-supported research that has contributed to improving clinical care for patients who have sickle cell disease. It will also complement the Institute's broader sickle cell disease research investment, which includes basic, clinical, translational, and implementation science research.

The Initiative supports the following:

- **Enhanced clinical trial recruitment and establishment of transplant standards** to quickly and safety move clinical studies forward
- **Increased capacity to safely manufacture cellular therapy products** through the NHLBI Production Assistance for Cellular Therapies (PACT) program@, which includes cell processing facilities to produce genetically modified cells so they can be safely used in patients

Collaboration

- PACT mission
  - to support the production and testing of novel cell therapies, particularly in relation to the strategic goals, objectives and research priorities of NHLBI https://www.nhlbi.nih.gov/about/strategic-vision

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CURE SICKLE CELL.

Production Assistance for Cellular Therapies (PACT) Program
NHLBI

Robert Lindblad, MD
Chief Medical Officer
The Emmes Corporation
PI PACT Coordinating Center

Objectives

- **What is PACT?**
- **Why contact PACT?**
- **How do I contact PACT?**

Email: pactgroup@emmes.com

Website: www.pactgroup.net

Outline

- **PACT PROGRAM**
  - Program, cell types, application for manufacturing assistance
  - Education
  - Technical projects
- **REGULATORY SUPPORT**
  - Gap analysis
  - FDA meeting support

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PACT Program

NHLBI-funded initiative

- PACT 1: Began in September 2003-2009 (1 year no cost extension)
  - 3 facilities/1 Coordinating Center. Scope - clinical product support
- PACT 2: Renewed in January 2010-2015
  - 5 facilities/1 Coordinating Center. Scope - clinical/translational
- 1 ½ year hiatus
- PACT 3: Re-awarded in July 2016
  - 5 facilities/1 Coordinating Center. Scope - preclinical/translational

Current Mission

Provide assistance with cellular therapy translational research and the manufacture of cellular therapy products

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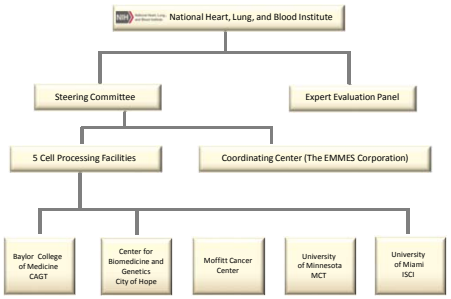
PACT Organizational Structure



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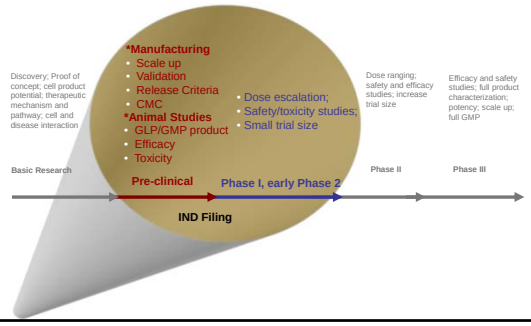
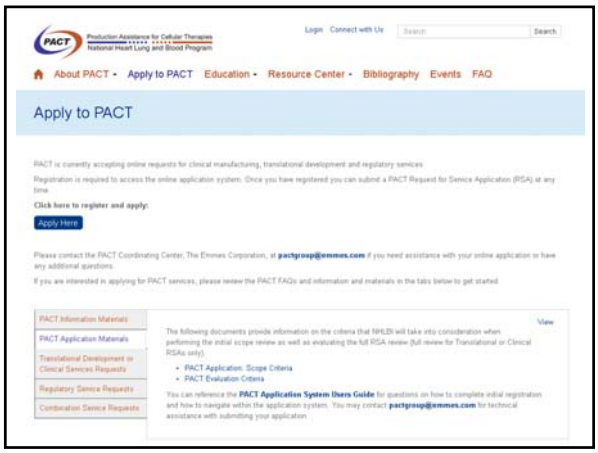
Scope

- Products and services of programmatic interest to the National Heart, lung and Blood Institute
- Products that aid in the repair and regeneration of damaged/diseased tissues, organs, and biologic systems
- Cell therapy manufacturing for preclinical studies including basic and translational work
- Cell therapy manufacturing for phase 1/2 clinical trials
- Regulatory support
- Proposals possessing procedural advancements to further foster and standardize cell therapies

PACT's Role in Supporting Preclinical Work and Early Phase Clinical Trials

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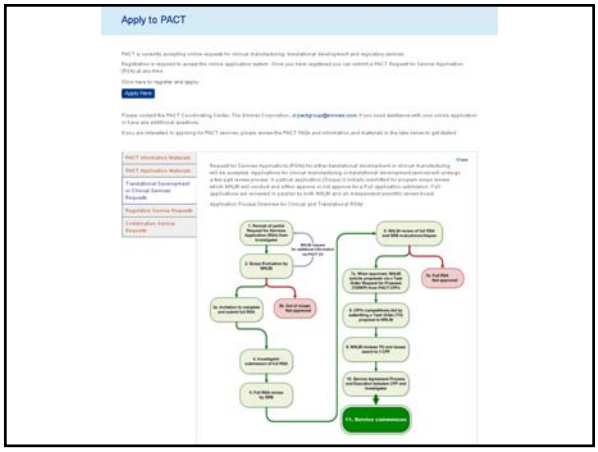
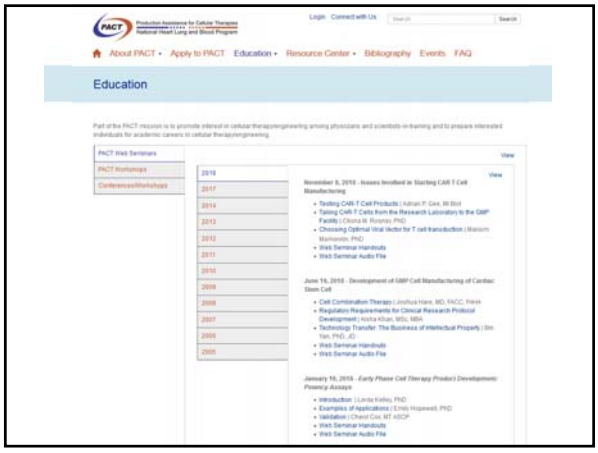
Apply to PACT
PACT is currently accepting online requests for clinical manufacturing, translational development and regulatory services.
Registration is required to access the online application system. Once you have registered you can submit a PACT Request for Service Application (RSA) at any time.
Click here to register and apply:
Apply Here
Please contact the PACT Coordinating Center, The Emmes Corporation, at pactgroup@emmes.com if you need assistance with your online application or have any additional questions.
If you are interested in applying for PACT services, please review the PACT FAQs and information and materials in the tabs below to get started.
PACT Information Materials
PACT Application Materials
Translational Development or Clinical Services Requests
Regulatory Service Requests
Combination Service Requests
View
The following documents provide information on the criteria that NHLBI will take into consideration when performing the initial scope review as well as evaluating the full RSA review (full review for Translational or Clinical RSAs only).
PACT Application: Scope Criteria
PACT Evaluation Criteria
You can reference the PACT Application System Users Guide for questions on how to complete initial registration and how to navigate within the application system. You may contact pactgroup@emmes.com for technical assistance with submitting your application.


Apply to PACT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November 8, 2018 - Issues Involved in Starting CAR T Cell Manufacturing
Testing CAR-T Cell Products | Adrian P. Gee, BI Biol
Taking CAR T Cells from the Research Laboratory to the GMP Facility | Diana M. Rooney, PhD
Choosing Optimal Viral Vector for T cell transduction | Manomi Mamonkin, PhD
Web Seminar Handouts
Web Seminar Audio File
June 15, 2018 - Development of GMP Cell Manufacturing of Cardiac Stem Cell
Cell Combination Therapy | Joshua Hare, MD, FACC, FAHA
Regulation Requirements for Clinical Research Protocol Development | Aisha Khan, MSL, MBA
Technology Transfer: The Business of Intellectual Property | Shi Yan, PhD, JD
Web Seminar Handouts
Web Seminar Audio File
January 10, 2018 - Early Phase Cell Therapy Product Development: Potency Assays
Introduction | Linda Kelley, PhD
Examples of Applications | Emily Hopewell, PhD
Validation | Cheryl Cox, MT ASCP
Web Seminar Handouts
Web Seminar Audio File

Educational Resources

- SOPs
  - 309 individual requests totaling >1275 individual SOP distributions
  - 113 US Institutions/sites and 22 international countries

✓ Most requested

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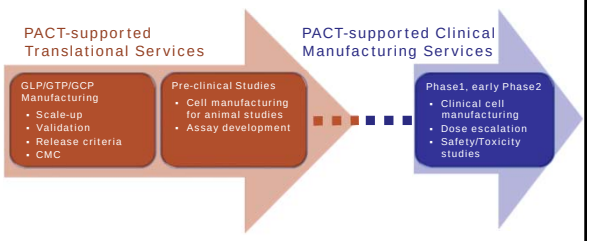
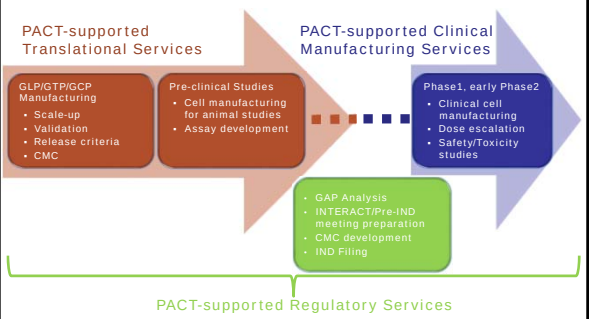
Regulatory Support

Cell Manufacturing for IND-enabling and Early Phase Clinical Studies



Cell Manufacturing for IND-enabling and Early Phase Clinical Studies



GAP Analysis

- Provides insight into what additional work may be needed to support an IND application
- Geared toward an understanding of how the data generated from Proof of Concept, non-clinical and CMC development map to the requirements of an IND application
- Recommendations for facilitating a successful a PACT Request for Service Application (RSA)

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FDA Meeting support

FDA Meeting Support

FDA communication and assistance:

- INTERACT and pre-IND meeting scheduling and planning
- Developed questions to ask the agency
  - Content
  - Format
- Quality of the CMC information
- Status of the Pre-clinical information
- Status of the general investigational plan and proposed clinical indication
- Adequate phase 1 synopsis, defined activity evaluation and protocol

Definitions for Acceleration of Review

- Serious or life threatening disease
  - Disease or condition associated with morbidity that has substantial impact on day-to-day functioning
- Unmet medical need
  - A condition whose treatment or diagnosis is not addressed adequately by available therapy

Other Regulatory Considerations

- Orphan Designation
- Special Protocol Assessment
- Accelerating Development
  - Fast Track
  - Breakthrough Designation
  - Priority Review
  - Accelerated Approval
- Regenerative Medicine Provisions
- Electronic submissions

Contact Information

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