Regulatory Updates for Human Cell Therapy Products:
An FDA Perspective

CASSS Cell and Gene Therapy Products Symposium
Regulatory Updates from Across the Globe
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Center Director

Office of Tissues and Advanced Therapies (OTAT)
Office of Blood Research and Review (OBRR)
Office of Vaccines Research and Review (OVRR)
Office of Compliance and Biologics Quality (OCBQ)

Division of Cellular and Gene Therapies
Division of Plasma Protein Therapeutics
Division of Clinical Evaluation and Pharmacology/Toxicology
Division of Human Tissues
Division of Regulatory Project Management

Cell Therapies Branch
Gene Therapies Branch
Gene Transfer and Immunogenicity Branch
Tumor Vaccines and Biotechnology Branch
Cellular and Tissue Therapy Branch
Human Cell Therapy Products

- **Stem cell and stem cell-derived products**
  - Hematopoietic, mesenchymal, cord blood, embryonic, iPSCs

- **Somatic cell therapies**
  - Pancreatic islets, chondrocytes, keratinocytes, hepatocytes

- **Cancer vaccines and cellular immunotherapies**
  - Cancer cell-based therapies, immune system cell-based therapies

- **Tissue-based therapeutic products**
  - Amniotic membrane, umbilical cord, thymus, amniotic fluid

- **Xenotransplantation products**

- **Combination products**
  - Cells + scaffolds, cell encapsulation for implantation

- **Devices**
  - Processing cells/tissues, delivery of cells/gene therapies
New Cell Therapy Files Received per Calendar Year in OTAT (by Submission Type)

- Meetings**
- 510(k)
- IDE
- IND

* Combination products in IND
** Pre-pre-INDs/INTERACT, Pre-INDs, INDs, Pre-submissions
New Cell Therapy INDs Received per Calendar Year in OTAT (by Clinical Study Phase)
Guidance Document Updates (1)

- Regenerative Medicine Therapies
  - Cell therapies
  - Therapeutic tissue engineering products
  - Human cell and tissue products
  - Human gene therapies
  - Xenogeneic cell products
  - Combination products

Expedited Programs for Regenerative Medicine Therapies for Serious Conditions

Guidance for Industry
U.S. Department of Health and Human Services
Food and Drug Administration
Center for Biologics Evaluation and Research
February 2019

- Fast Track Designation
- Breakthrough Therapy Designation
- Regenerative Medicine Advanced Therapy Designation
- Priority Review Designation
- Accelerated Approval
- [https://www.fda.gov/media/120267/download](https://www.fda.gov/media/120267/download)
Devices used to:
- **Recover** - obtain cell/tissue from human donor
- **Isolate** - process cell/tissue
- **Deliver** - administer RMAT

Device Premarket Pathways
Combination Products

Appropriate use of FDA recognized and non-recognized consensus standards

Center for Devices and Radiological Health recognized standards can be used to support CBER-regulated devices

CDRH-recognized standards available at
https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfStandards/search.cfm

https://www.fda.gov/media/71983/download
CBER’s Standards Guidance

• Overview of standards
• How are voluntary standards developed?
• What are the benefits of using voluntary standards?
• What is CBER’s policy on accepting standards used in regulatory submissions?

https://www.fda.gov/media/124694/download
Standards Activities at OTAT

• Staff (OTAT researchers, reviewers, and policy makers) act as liaisons to Standards Development Organization (SDO) technical committees to:
  – Facilitate the development of standards that are not in conflict with FDA regulations and policies
  – Increase the likelihood that standards developed will be suitable for regulatory submissions reviewed by FDA

• Work with relevant national and international regulatory agencies to identify and fill gaps
Standards Activities – Update (1)

- 21st Century Cures Act
- Prepared for FDA/CBER
- Provides summary of existing Cell Therapy (73), Gene Therapy (50), Tissue Engineering (67), and Supportive (75) standards
- Concluded: “a critical need for more regenerative medicine standards”
Existing Regenerative Medicine Therapies
Consensus Standards Examples

- ASTM F2312-11: Standard Terminology Relating to Tissue Engineered Medical Products
- ASTM F2315 Standard Guide for Immobilization or Encapsulation of Living Cells or Tissue in Alginate Gels
- ISO 13022:2012: Medical products containing viable human cells - Application of risk management & requirements for processing practices
- ISO 20387:2018: Biotechnology - Biobanking - General requirements for biobanking
- ISO 10993: Biocompatibility
Standards Activities – Update (2)

- Standards development process, participation, and role in improving product quality and safety
- **Identified high-priority standards needs:** cell viability, chain of identity and chain of custody, characterization of scaffold materials, and viral vector gene quantification
- **Focus on:** Characterization of Human Cells for Therapeutic Use and Rapid Microbial Testing Methods
CBER Contact Information

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- Regulatory Questions:
  Contact the Regulatory Management Staff in OTAT at OTATRPMS@fda.hhs.gov or Lori.Tull@fda.hhs.gov

- OTAT Learn Webinar Series:
  http://www.fda.gov/BiologicsBloodVaccines/NewsEvents/ucm232821.htm

- References for the regulatory process for OTAT:

- CBER website: http://www.fda.gov/BiologicsBloodVaccines/default.htm

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- Consumer Affairs Branch Email: ocod@fda.hhs.gov

- Manufacturers Assistance and Technical Training Branch Email: industry.biologics@fda.gov

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