U.S. FOOD & DRUG

CDER SMALL BUSINESS AND INDUSTRY ASSISTANCE (SBIA)

# Advancing Generic Drug Development Translating Science to Approval

SEPTEMBER 13-14 VIA WEBCAST | www.fda.gov/CDERSBIA

Version 5 – Updated August 14, 2023

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All times are Eastern (UTC-5) View Start Time on World Clock

## DAY ONE: Wednesday, September 13, 2023

9:00 - 9:15

Welcome

Brenda Stodart, PharmD, MS, BCGP, RAC Captain, United States Public Health Service Director, Small Business, and Industry Assistance (SBIA) Division of Drug Information (DDI) Office of Communications (OCOMM)

Center for Drug Evaluation and Research (CDER)

9:15 - 9:30

Keynote

Robert Califf, MD (Invited) Commissioner of Food and Drugs Food and Drug Administration

Renu Lal, PharmD

DDI | OCOMM | CDER

LCDR, USPHS, Pharmacist

Your SBIA Hosts for Day One

Forest "Ray" Ford, PharmD, BCPS CAPT, USPHS, Pharmacist DDI | OCOMM | CDER

## **Session 1: Noteworthy Guidances and Generic Approvals for Topical and Transdermal Products**

Session Leads: **Darby Kozak, PhD,** *Deputy Director*, Division of Therapeutic Performance I (DTP I) | Office of Research and Standards (ORS) | Office of Generic Drugs (OGD) | Center for Drug Evaluation and Research (CDER) and **Ahmed Zidan, PhD,** *Senior Staff Fellow*, Division of Product Quality Research (DPQR) | Office of Testing and Research (OTR) | Office of Pharmaceutical Quality (OPQ) | CDER

#### 9:30 - 10:00

General Guidances Related to Characterization-Based Bioequivalence Approaches for Topical Products

> Priyanka Ghosh, PhD Lead Pharmacologist

DTP I | ORS | OGD | CDER Hiren Patel, PhD

Senior Staff Fellow Division of Bioequivalence II (DB II) Office of Bioequivalence (OB) | OGD | CDER

10:00 - 10:20

An Overview of the Current Product-Specific Guidances for Topical Products

Megan Kelchen, PhD Senior Pharmacologist DTP I | ORS | OGD | CDER

10:20 - 10:40

How Research Supports Product-Specific Guidances for Topical Products

Ahmed Zidan, PhD Senior Staff Fellow DPQR | OTR | OPQ | CDER

10:40 – 10:50: BREAK

#### 10:50 - 11:10

Overview and Changes to Guidance for Industry: Topical Dermatology Corticosteroids In Vivo Bioequivalence

#### Ke Ren, PhD

Deputy Division Director Division of Bioequivalence III (DB III) | OB | OGD | CDER

#### 11:10 – 11:30

ANDA Challenges Related to Vasoconstrictor Studies

Kairui (Kevin) Feng, PhD Senior Chemical Engineer Division of Quantitative Methods and Modeling (DQMM) | ORS | OGD | CDER

11:30 – 12:15

Session 1: Q&A Panel

Priyanka Ghosh, Hiren Patel, PhD, Megan Kelchen, Ahmed Zidan, Ke Ren, Kairui (Kevin) Feng, and

> Markham C. Luke, MD, PhD Division Director, DTP I | ORS | OGD | CDER

Sam Raney, PhD Associate Director for Science, ORS | OGD | CDER

Pahala Simamora, PhD Division Director, DLBP II | OLDP | OPQ | CDER

Rong Wang, PharmD, PhD Associate Director, DB I | OB | OGD | CDER

12:15 - 1:00 PM: LUNCH BREAK

#### Session 2: Noteworthy Guidances for Nasal Suspension and Inhalation Products

Session Leads: **Darby Kozak, PhD**, *Deputy Director*, DTP I | ORS | OGD | CDER and **Ahmed Zidan, PhD**, *Senior Staff Fellow*, DPQR | OTR | OPQ | CDER

#### 1:00 - 1:20

Complex Nasal Suspension PSG: Utilization of Newly Recommended In Vitro Only Bioequivalence Option

Susan Boc, PhD Pharmacokineticist DTP I | ORS | OGD | CDER

1:20 - 1:40

Complex Nasal Suspension: Utilization of In Silico PK Studies to Support Development and Approval

Ross Walenga, PhD Senior Chemical Engineer DQMM | ORS | OGD | CDER

#### 1:40 - 2:00

Loxapine Inhalation Powder: OTR Research Conducted to Inform the PSG Recommendations

Nathan Reed, PhD Chemist DCDA B2, OTR, OPQ, CDER

Elizabeth Bielski, PhD

Senior Pharmacologist DTP I, ORS, OGD, CDER

2:00 - 2:30

Session 2: Q&A Panel

#### Susan Boc, Ross Walenga, Nathan Reed, Elizabeth Bielski, and

Vipra Kundoor, PhD Pharmacologist, DB I | OB | OGD | CDER

Mai Tu, PhD Chemist, LBB4 | DLBP II | OLDP | OPQ | CDER

Ahmed Zidan, PhD Senior Staff Fellow, DPQR | OTR | OPQ | CDER

2:30 - 2:40 PM: BREAK

## **Session 3: Noteworthy Guidances for Injectable Products**

Session Leads: **Cameron Smith**, **PhD**, *Branch Chief*, DLBP I | OLDP | OPQ | CDER and **Yan Wang**, **PhD**, *Lead Pharmacologist*, DTP I | ORS | OGD | CDER

#### 2:40 - 2:55

In Vitro Approaches for Injectable Suspension Products: Medroxyprogesterone Acetate & Triamcinolone Acetate

Qiangnan Zhang, PhD Staff Fellow

DTP I | ORS | OGD | CDER

2:55 – 3:10

**Risk-based PSG Recommendations for Comparative Immunogenicity and Impurity Profile Assessment** 

> Eric Pang, PhD Senior Chemist

DTP I | ORS | OGD | CDER

3:10 - 3:30

Session 3: Q&A Panel

Qiangnan Zhang, Eric Pang, and

Dapeng Cui, PhD Lead Pharmacologist, DB I | OB | OGD | CDER

Cameron Smith, PhD Branch Chief, DLBP | OLDP | OPQ | CDER

### Session 4: Noteworthy Complex Generic Drug Approvals: Multiphase Systems

Session Leads: **Brock Roughton, PhD**, *Branch Chief*, DLBP II | OLDP | OPQ | CDER and **Ke Ren, PhD**, *Deputy Division Director*, DB III | OB | OGD | CDER

3:30 - 3:50

Cyclosporine & Difluprednate Ophthalmic Emulsions

Qiuxi Fan, PhD Pharmaceutical Scientist DLBP II | OLDP | OPQ | CDER

Yoriko Harigaya, PharmD Senior Staff Fellow

DB II | OB | OGD | CDER

3:50 - 4:10

Amphotericin B Liposome: Changes Identified

Bin Qin, PhD Senior Chemist

DTP I | ORS | OGD | CDER

4:10 - 4:25

Phytonadione – Self-Assembled System & Thermodynamics Systems

William Smith, PhD

Research Scientist DPQR | OTR | OPQ | CDER

4:25 - 4:55

Session 4: Q&A Panel

Qiuxi Fan, Yoriko Harigaya, Bin Qin, William Smith, and

John Jiang, PhD Chemist, DLBP II | OLDP | OPQ | CDER

Hee Sun Chung, PhD Lead Pharmacologist, DB I | OB | OGD | CDER

Khondoker Alam, PhD Senior Pharmacologist, DQMM | ORS | OGD | CDER

Xiaoming Xu, PhD Supervisory Chemist, DPQR | OTR | OPQ | CDER

4:55 - 5:00

Day One Closing Remarks

Lei Zhang, PhD Deputy Director ORS | OGD | CDER

9:00 - 9:15

Day Two SBIA Overview

Forest "Ray" Ford, PharmD, BCPS CAPT, USPHS DDI | OCOMM | CDER

## Session 5: Noteworthy Complex Generic Drug Approvals: Orally Inhaled Products

Session Leads: Lanyan (Lucy) Fang, PhD, Deputy Division Director, DQMM | ORS | OGD | CDER and Michael Spagnola, MD, Lead Physician, Division of Clinical Safety and Surveillance (DCSS) | Office of Safety and Clinical Evaluation (OSCE) | OGD | CDER

9:15 - 9:30

Innovative Technology: Particle Image Velocimetry (PIV) and High-Speed Imaging to Support Approval of Generic Orally Inhaled Drug Products

> Steven Chopski, PhD Staff Fellow DQMM | ORS | OGD | CDER

9:30 - 9:45

First Generic Drug Approval: Budesonide & Formoterol Fumarate Dihydrate Inhalation Aerosol (RLD: Symbicort): A Bioequivalence Perspective

Zhen Xu, PhD Staff Fellow DB III | OB | OGD | CDER

9:45 - 10:00

First Generic Drug Approval: Budesonide & Formoterol Fumarate Dihydrate Inhalation Aerosol (RLD: Symbicort): A Quality Perspective

Fang Yuan, PhD Senior Chemist IO | OLDP | OPQ | CDER

10:00 - 10:15

Post-Approval Impact of Generic Fluticasone Propionate & Salmeterol Inhalation Powder

Andrew Clerman, MD, PhD Senior Physician Division of Therapeutic Performance I (DTP I) ORS | OGD | CDER

10:15 – 10:55	
Session 5: Q&A Panel	
	Steven Chopski, Zhen Xu, Fang Yuan, Andrew Clerman, and
	Srinivas Behara, PhD Chemist, Division of Immediate and Modified Release Products III (DIMRP III) OLDP   OPQ   CDER
	<b>Tian Ma, PhD</b> Senior Staff Fellow, DB I   OB   OGD   CDER
	Elizabeth Bielski, PhD Senior Pharmacologist, DTP I   ORS   OGD   CDER

#### 10:55 – 11:05 AM: BREAK

## Session 6: Noteworthy Complex Generic Drug Approvals: Oral Locally Acting & Oral Suspension Drug Products

Session Leads: **Brock Roughton, PhD**, *Branch Chief*, DLBP II | OLDP | OPQ | CDER and **Ke Ren, PhD**, *Deputy Division Director*, DB III | OB | OGD | CDER

11:05 - 11:25

**Bioequivalence for Oral Locally Acting Gastrointestinal Drug Products** 

Wei-Jhe Sun, PhD Senior Staff Fellow DTP II, ORS, OGD, CDER

11:25 – 11:45

Q1/Q2 Recommendation (Sucralfate)

Manar Al-Ghabeish, PhD Staff Fellow DTP II | ORS | OGD | CDER

11:45 - 12:05

Non-Q2 Sucralfate Suspension Approval

Suman Dandamudi, PhD Senior Pharmacologist DB III | OB | OGD | CDER

12:05 – 12:35

Session 6: Q&A Panel

Wei-Jhe Sun, Manar Al-Ghabeish, Suman Dandamudi, and

Alicia Hoover, PhD Supervisory Chemist, Division of Pharmaceutical Analysis (DPA) | OTR | OPQ | CDER

> Fang Wu, PhD Senior Pharmacologist, DQMM | ORS | OGD | CDER

Hongfei Zhou, PhD Senior Pharmacologist, DB III | OB | OGD | CDER

#### 12:35 – 1:35: LUNCH BREAK

## Session 7: Enhanced Processes, Research, and Assessment Tools to Support Generic Drug Product Development

Session Leads: Lanyan (Lucy) Fang, PhD, Deputy Division Director, DQMM | ORS | OGD | CDER and Michael Spagnola, MD, Lead Physician, Division of Clinical Safety and Surveillance (DCSS) | Office of Safety and Clinical Evaluation (OSCE) | OGD | CDER

1:35 – 1:50

**GDUFA Research Program: Research Priorities to Support Generic Drug Development** 

Sam Raney, PhD Associate Director for Science ORS | OGD | CDER

1:50 - 2:05

Identify Research Needs and PSG Development for Complex Products

Xiaoming Xu, PhD Division Director DPQR | OTR | OPQ | CDER

2:05 - 2:20

Enhance Communication in Using Modeling Approaches in ANDAs

Liang Zhao, PhD Division Director DQMM | ORS | OGD | CDER

2:20 – 2:50

Session 7: Q&A Panel

#### Sam Raney, Xiaoming Xu, Liang Zhao, and

Darby Kozak, PhD Deputy Division Director | DTP I | ORS | OGD | CDER

> Robert Lionberger, PhD Director | ORS | OGD | CDER

Zhen Zhang, PhD Master Pharmacologist | DB | OB | OGD | CDER

2:50 – 3:00 PM: BREAK

## Session 8: Global Collaboration to Support Efficient Generic Product Development & Regulatory Assessment

Session Leads: **Heather Boyce, PhD**, *Lead Pharmacokineticist*, DTP II | ORS | OGD | CDER and **Diana Vivian, PhD**, *Associate Director*, DB II | OB | OGD | CDER

3:00 - 3:15

Supporting the First Harmonized Bioequivalence Guideline under ICH -Considerations for Future Implementation

Nilufer Tampal, PhD

Associate Director for Scientific Quality OB | OGD | CDER

3:15 - 3:30

FDA-EMA Parallel Scientific Advice Pilot Program for Complex Generic/Hybrid Drug Products

Lei Zhang, PhD Deputy Director ORS | OGD | CDER

OGD | CDER

3:30 - 3:45

The Generic Drug Cluster Program and the Path to Global Harmonization

Sarah Ibrahim, PhD Associate Director for Global Affairs

3:45 - 4:00

Data Reliability – Inspection, Global Collaboration

Brian Folian, JD, MS Deputy Director

Office of Study Integrity and Surveillance (OSIS) Office of Translational Sciences (OTS) | CDER

4:00 – 4:40	
Session 8: Q&A Panel	
	Nilufer Tampal, Lei Zhang, Sarah Ibrahim, Brian Folian, and
	Wenlei Jiang, PhD Senior Advisor for Innovation and Strategic Outreach, ORS   OGD   CDER
	Xiaojian Jiang, PhD Deputy Division Director, DB II   OB   OGD   CDER
	<b>Myong-Jin Kim, PharmD</b> Division Director, DTP II   ORS   OGD   CDER
4:40 – 4:50	
Closing Remarks	
	Robert Lionberger, PhD

Director ORS | OGD | CDER

4:50: WORKSHOP ADJOURN

#### List of Acronyms Used in This Document:

Board Certified Geriatric Pharmacist (BCGP) Board Certified Pharmacotherapy Specialists (BCPS) Captain (CAPT) Center for Drug Evaluation and Research (CDER) Division of Bioequivalence I (DB I) Division of Bioequivalence II (DB II) Division of Bioequivalence III (DB III) Division of Biotechnology Review and Research III (DBRR III) Division of Clinical Safety and Surveillance (DCSS) Division of Complex Drug Analysis (DCDA) Division of Drug Information (DDI) Division of Immediate and Modified Release Products III (DIMRP III) Division of Liquid-Based Products I (DLBP I) Division of Liquid-Based Products II (DLBP II) Division of Product Quality Research (DQPR) Division of Quantitative Methods & Modeling (DQMM) Division of Therapeutic Performance I (DTP I) Division of Therapeutic Performance II (DTP II) Doctor of Medicine (MD) Doctor of Pharmacy (PharmD) Doctor of Philosophy (PhD) Food and Drug Administration (FDA) Lieutenant Commander (LCDR) Liquid-Based Branch 4 (LBB 4) Master of Science (MS) Office of Bioequivalence (OB) Office of Communications (OCOMM) Office of Generic Drugs (OGD) Office of Lifecycle Drug Products (OLDP) Office of Pharmaceutical Quality (OPQ) Office of Research and Standards (ORS) Office of Safety & Clinical Evaluation (OSCE) Office of Study Integrity and Surveillance (OSIS) Office of Testing & Research (OTR) Office of Translational Sciences (OTS) Regulatory Affairs Certification (RAC) Small Business, and Industry Assistance (SBIA) United States Public Health Service (USPHS)