AN AAPS WORKSHOP

COSPONSORED BY
US FOOD & DRUG
ADMINISTRATION

PRINCIPLES AND CRITERIA FOR THE DEVELOPMENT AND OPTIMIZATION OF

Topical

THERAPEUTIC PRODUCTS PROGRAM

MARCH 26-28, 1990
HYATT REGENCY CRYSTAL CITY
ARLINGTON, VIRGINIA

aaps

TOPICAL DRUG PRODUCTS WORKSHOP

Principles and Criteria for the Development and Optimization of Topical Therapeutic Products

March 26-28, 1990

This AAPS/FDA/Industry co-sponsored workshop will address problems, issues and possible solutions in the development and optimization of dermatological topical drug products.

The major objectives of the workshop are to:

- Review and evaluate available information on topical drug products.
- Evaluate relationships between pharmacological activity, drug delivery and clinical efficacy.
- Identify important principles in the development and optimization of topical drug products.
- Identify ways to optimize topical drug delivery to target sites.
- Raise possible concerns related to the local and systemic toxicity problems arising from optimization of drug delivery.
- Discuss regulatory concerns in the evaluation of topical drug products.

A second part of this workshop will be held in the Spring of 1991. The purpose of the second part will be to provide solutions for the problems identified in the first part of the workshop.

Sponsors

A special thanks to Dr. A. Waseem Malick, Hoffmann-LaRoche, Inc., and Dr. Sergio Nacht, Advanced Polymer Systems, for their generous contributions in funding the planning costs for this workshop.

Planning Committee

PROGRAM

Room Assignments

Registration	2C Foyer
General Session	Regency E-F
Lunch	Regency C-D Center
Reception/Posters	Regency C-D Center & 2C Foyer

MONDAY, MARCH 26, 1990

8:30 a.m. **Welcome**
Carl C. Peck, M.D.
Food and Drug Administration

8:40 a.m. **Scientific Rationale and Objectives**
Charan R. Behl, Ph.D.
Hoffmann-La Roche Inc.

8:50 a.m. **Regulatory Rationale and Objectives**
Vinod P. Shah, Ph.D.
Food and Drug Administration

PROBLEMS IN THE DEVELOPMENT OF TOPICAL PRODUCTS

Moderators: Charan R. Behl, Ph.D.
Howard I. Maibach, M.D.

9:00 a.m. **General Introduction and Conceptual Evaluation of the Essential Differences in Topical and Transdermal Drug Delivery**
Gordon L. Flynn, Ph.D.
University of Michigan

9:45 a.m. **Basic Review of Skin Structure/Composition and Pathophysiology of the Skin as Related to Skin Uptake and Skin Metabolism of Topical Drugs**
Hans Schaefer, Ph.D.
CIRD (France)

10:30 a.m. **Break**

10:50 a.m. **Developmental Process in Topical Dosage Forms**
Boyd J. Poulsen, Ph.D.
Syntex Research

11:35 a.m. **Problems and Issues in Review and Regulatory Process**
C. Carnot Evans, M.D.
Food and Drug Administration

12:05 p.m. **General Discussion and Q&A**

12:30 p.m. **Lunch**

CRITICAL CONSIDERATIONS IN THE DEVELOPMENT OF TOPICAL PRODUCTS

Moderators: A. Waseem Malick, Ph.D.
Shirley Ng, Ph.D.

1:30 p.m. **Critical Considerations - I**
Charan R. Behl, Ph.D.
Hoffmann-La Roche Inc.

2:15 p.m. **Critical Considerations - II**
Russell O. Potts, Ph.D.
Pfizer Central Research

3:00 p.m. **Break**

3:20 p.m. **Critical Considerations - III**
Brian W. Barry, Ph.D.
University of Bradford
(United Kingdom)

4:05 p.m. **Critical Considerations - IV**
Gerald G. Krueger, M.D.
University of Utah

4:50 p.m. **General Discussion and Q&A**

5:30 p.m.-6:30 p.m. **Reception**

TUESDAY, MARCH 27, 1990

DEVELOPMENT OF TOPICAL DRUG PRODUCTS - I

Moderators: Vinod P. Shah, Ph.D.
Gerald G. Krueger, M.D.

8:30 a.m. **Examples of Problems Encountered in the Determination of Bioavailability of Drugs from Topical Products**
Vinod P. Shah, Ph.D.
Food and Drug Administration

Lynn K. Pershing, Ph.D.
University of Utah

9:30 a.m. **Clinical Toxicology of Topical Products**
Howard I. Maibach, M.D.
University of California

10:00 a.m. **Break**

10:20 a.m. **Pitfalls in Toxicological Studies**
Robert C. Scott, Ph.D.
ICI/PLC (United Kingdom)

11:05 a.m. **Development of Glucocorticoid Products**
Joel A. Sequeira, Ph.D.
Schering Plough Corporation

11:50 a.m. **Skin Blanching Assays and Alternatives**
Dale P. Connor, Pharm.D.
Uniformed Services University of the Health Sciences

12:30 p.m. **Lunch**

DEVELOPMENT OF TOPICAL DRUG PRODUCTS - II

Moderators: Gordon L. Flynn, Ph.D.
Maw-Sheng Wu, Ph.D.

1:30 p.m. **Development of Anti-Infective Agents for Skin**
James J. Leyden, M.D.
University of Pennsylvania

2:15 p.m. **Development of Topical Retinoids**
Thomas J. Franz, M.D.
University of Arkansas

3:00 p.m. **Break**

3:20 p.m. **Hair Growth Products: Challenges**
Vera H. Price, M.D.
University of California, San Francisco

4:05 p.m. **Conventional vs. Controlled Release Topical Products**
Sergio Nacht, Ph.D.
Advanced Polymer Systems, Inc.

4:50 p.m. **Cosmeceuticals**
Eugene H. Gans, Ph.D.
Hastings Associates

WEDNESDAY, MARCH 28, 1990

REGULATORY ASPECTS IN THE DEVELOPMENT OF TOPICAL PRODUCTS

Moderators: Jerome J. Skelly, Ph.D.
Dinesh Sharma, D.Sc.

8:30 a.m. **Factors to be Considered in the Evaluation of Bioavailability and Bioequivalence of Topical Products**
William I. Higuchi, Ph.D.
University of Utah

9:15 a.m. **Quality Control Aspects of Topical Products**
Nicholas Kail, Ph.D.
CIRD (France)

Vinod P. Shah, Ph.D.
Food and Drug Administration

10:00 a.m. **Break**

10:20 a.m. **International Regulatory Process: Presentations and General Discussion**
United States - C.C. Peck, M.D.
Canada - D.W. Hughes, Ph.D.
Japan - Y. Morimoto, Ph.D.
Germany - A. Zesch, M.D.
France - H. Schaefer, Ph.D.
United Kingdom - To be announced

12:00 noon **Lunch**

WHERE DID WE COME FROM, WHERE ARE WE NOW, AND WHERE ARE WE GOING?

Moderator: William I. Higuchi, Ph.D.

1:00 p.m. **Panel Presentation and Discussion**
A. Waseem Malick, Ph.D., Roche
Dinesh Sharma, D.Sc., NIH
Jerome P. Skelly, Ph.D., FDA

3:00 p.m. **Closing Remarks and Summary**

DEVELOPMENT PROCESS IN TOPICAL DOSAGE FORMS

BOYD J. POULSEN, PH.D.
SYNTEX RESEARCH
PALO ALTO, CA 94304

I. "PRE-DEVELOPMENT"
- A. DRUG PROPERTIES
  - 1. PHYSICAL CHEMICAL PROPERTIES
  - 2. PHARMACOLOGY
- B. PROPOSED CLINICAL APPLICATION

II. EARLY DEVELOPMENT ELEMENTS
- A. PROTOTYPE FORMULATIONS
  - 1. DESIGN APPROACH
  - 2. DRUG BIOAVAILABILITY (ACTIVITY)
  - 3. DRUG STABILITY
  - 4. PRESERVATION
  - 5. FORMULATION TOXICOLOGY
    - a. IRRITATION
    - b. SENSITIZATION
- B. ACCELERATED STABILITY STUDIES
  - 1. DRUG SHELF LIFE
  - 2. PRESERVATIVE SYSTEM
  - 3. STABILIZERS
  - 4. PHYSICAL STABILITY
  - 5. PACKAGE SELECTION
- C. DRUG DELIVERY - IN VITRO EXPERIMENTATION

III. ADVANCED DEVELOPMENT STAGE
- A. FINAL FORMULATION SELECTION AND EVALUATION

DOCKET ALARM

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts

Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research

With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips

Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS
Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS
Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS
Sync your system to PACER to automate legal marketing.