

**Stability –**

**Why do we care?/Justifying  
your product!**

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# Outline

Introduction

Expectations

Considerations

Guidance

Guidance Content

Final Thoughts



- Stability Program – A Rationally Designed Data Collection Program
- Data Describing Product Characteristics Over Time
- Result Is A Stability Profile
- Can Be Considered A Product Quality Measure

## *Expectations*

- Rational Design To Allow Evaluation
- What Changes Occur Or Can Be Expected To Occur
- What Is Important  
Efficacy, Safety, Quality (Performance)

## *Expectations*

### What Is Important?

- Efficacy - Drug Substance Content
- Safety - Degradation Products
- Performance (Quality)-
  - Drug Substance Availability
  - Physicochemical Properties

## *Expectations*

What Is Important May Be Product Specific

- Physicochemical Properties
  - Tablet Hardness – Chewable Tablets
  - pH – Unbuffered Solution
  - Viscosity – Ophthalmic Solutions

## *Expectations*

- ICH Q1 Guidance Recommendations Will Be Followed
- Other ICH Guidance May Be Applicable
- USP/NF Requirements Are Applicable
- Relevant FDA Guidance Is Applicable



## *Considerations*

What Might Affect the Important Product Properties?

Formulation/Component Interactions

Light

Temperature

Chemical Degradation

## *Considerations*

- Analytical Capability
- What Change Is Expected
- What Should Be Tested For
- Sample Generation
- Valid/Appropriate Test Methods

## *Guidance*

- ICH Q1A(R2) Stability Testing of New drug Substances and Products
- ICH Q1B Stability Testing: Photostability Testing of New Drug Substances and Products
- ICH Q1C Stability Testing for New Dosage Forms
- ICH Q1D Bracketing and Matrixing Designs of New Drug Substances and Products



## *Guidance*

ICH Q1E      Evaluation of Stability Data

Guidance for Industry

ANDAs: Stability Testing of Drug  
Substances and Drug Products  
Questions and Answers

United States Pharmacopeia/National Formulary

## *Guidance*

- SUPAC-IR Immediate Release Solid Oral Dosage Forms Scale Up and Postapproval Changes: Chemistry, Manufacturing and Controls; In Vitro Dissolution Testing, and In Vivo Bioequivalence Documentation
- SUPAC-MR Modified Release Solid Oral Dosage Forms Scale Up and Postapproval Changes
- SUPAC-SS Nonsterile Semisolid Dosage Forms Scale Up and Postapproval Changes

## *Guidance*

### ➤ Product Criteria

ICH Q3A – Q3E

Impurities

ICH Q6A – Q6B

Specifications



## *Guidance Content*

ICH Q1A(R2) - The Basic Guidance

Batch Recommendations - Multiple, Scale

Storage Conditions - Standard Conditions  
Across Regions

Study Commitment - Relate Market  
Product to Application Data

Test Frequency - Time Intervals

## *Guidance Content*

### ICH Q1B Photostability Testing

- Provides Standard Conditions for Testing
- Guide for Packaging Considerations



## *Guidance Content*

### ICH Q1C      New Dosage Forms

- Applies to Owner of Existing Application
- Follow Principles of Q1A
- Potential for Reduced Database on Submission

## *Guidance Content*

### ICH Q1D      Bracketing and Matrixing

Reduced Design

Reduction Extent of Testing

- Bracketing – Exclusion of Samples
- Matrixing – Elimination of Testing at Selected Time Points

## *Guidance Content*

### ICH Q1E      Data Evaluation

- Discussion of Determination of Retest Period or Shelf-Life Estimation
- Based on Accelerated, Intermediate, Long Term Study Results
- Treatment of Multiple Batches, Variable Data, Statistical Models

## *Guidance Content*

### SUPAC-IR, SUPAC-MR, SUPAC-SS

#### Recommendations for Product Data and Submission Categories for Certain Postapproval Changes

##### Stability –

- Batch Scale
- Number of Batches
- Study Length, Conditions
- Study Commitment

## Final Thoughts

- Use The Available Guidance
- Justify Deviations
- Identify Relevant Product Characteristics
- Maintain The Protocol