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# Guidance for Industry

## Bioavailability and Bioequivalence Studies for Nasal Aerosols and Nasal Sprays for Local Action

### ***DRAFT GUIDANCE***

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For questions on the content of the draft document contact Wallace Adams, 301-594-5618.

**U.S. Department of Health and Human Services  
Food and Drug Administration  
Center for Drug Evaluation and Research (CDER)**

**Biopharmaceutics  
April 2003**

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## Bioavailability and Bioequivalence Studies for Nasal Aerosols and Nasal Sprays for Local Action

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**U.S. Department of Health and Human Services  
Food and Drug Administration  
Center for Drug Evaluation and Research (CDER)**

**Biopharmaceutics**

**April  
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*Contains Nonbinding Recommendations*

*Draft — Not for Implementation*

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*Note: The following stand alone documents will be provided when completed.*

**APPENDIX A: DECISION TREE FOR PRODUCT QUALITY STUDIES**

**APPENDIX B: STATISTICS FOR IN VITRO BA DATA**

**APPENDIX C: NONPROFILE IN VITRO BE DATA — USING PBE STATISTICS**

**APPENDIX D: NONPROFILE IN VITRO BE DATA — USING PBE STATISTICS**

**APPENDIX E: STATISTICS FOR IN VITRO PROFILE COMPARISONS**

**APPENDIX F: STATISTICS FOR ALLERGIC RHINITIS STUDIES**

**APPENDIX G: STATISTICS FOR SYSTEMIC EXPOSURE AND ABSORPTION**

# Guidance for Industry<sup>1</sup>

## Bioavailability and Bioequivalence Studies for Nasal Aerosols and Nasal Sprays for Local Action

This draft guidance, when finalized, will represent the Food and Drug Administration's (FDA's) current thinking on this topic. It does not create or confer any rights for or on any person and does not operate to bind FDA or the public. You can use an alternative approach if the approach satisfies the requirements of the applicable statutes and regulations. If you want to discuss an alternative approach, contact the FDA staff responsible for implementing this guidance. If you cannot identify the appropriate FDA staff, call the appropriate number listed on the title page of this guidance.

### I. INTRODUCTION

This guidance is intended to provide recommendations to applicants who are planning product quality studies to measure bioavailability (BA) and/or establish bioequivalence (BE) in support of new drug applications (NDAs) or abbreviated new drug applications (ANDAs) for locally acting drugs in nasal aerosols (metered-dose inhalers (MDIs)) and nasal sprays (metered-dose spray pumps). This guidance addresses BA and BE studies of prescription corticosteroids, antihistamines, anticholinergic drug products, and the over-the-counter (OTC) mast-cell stabilizer cromolyn sodium. Applicability of the guidance to other classes of intranasal drugs that may be developed in the future should be discussed with the appropriate CDER review division.

This guidance does not cover studies of nasal sprays included in an applicable OTC monograph<sup>2</sup> or studies of (1) metered-dose products intended to deliver drug systemically via the nasal route or (2) drugs in nasal nonmetered dose atomizer (squeeze) bottles that require premarket approval.

The first draft of this guidance was issued in June 1999 for comment. Because of changes made as a result of comments received to the docket, internal discussions, and deliberations of the Advisory Committee for Pharmaceutical Science, we have decided to issue the guidance once again in draft. A series of attachments are being developed and will be posted with this draft

<sup>1</sup> This guidance has been prepared by the Oral Inhalation and Nasal Drug Products Technical Committee, Locally Acting Drug Products Steering Committee, Biopharmaceutics Coordinating Committee, with contributions from the Inhalation Drug Products Working Group, the Chemistry, Manufacturing, and Controls Coordinating Committee, in the Center for Drug Evaluation and Research (CDER) at the Food and Drug Administration.

<sup>2</sup> 21 CFR 341. Cold, Cough, Allergy, Bronchodilator, and Antiasthmatic Drug Products for Over-the-Counter Human Use.

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