FDA U.S. FOOD & DRUG ADMINISTRATION
CENTER FOR DRUG EVALUATION & RESEARCH
OFFICE OF CLINICAL PHARMACOLOGY

Opening Remarks

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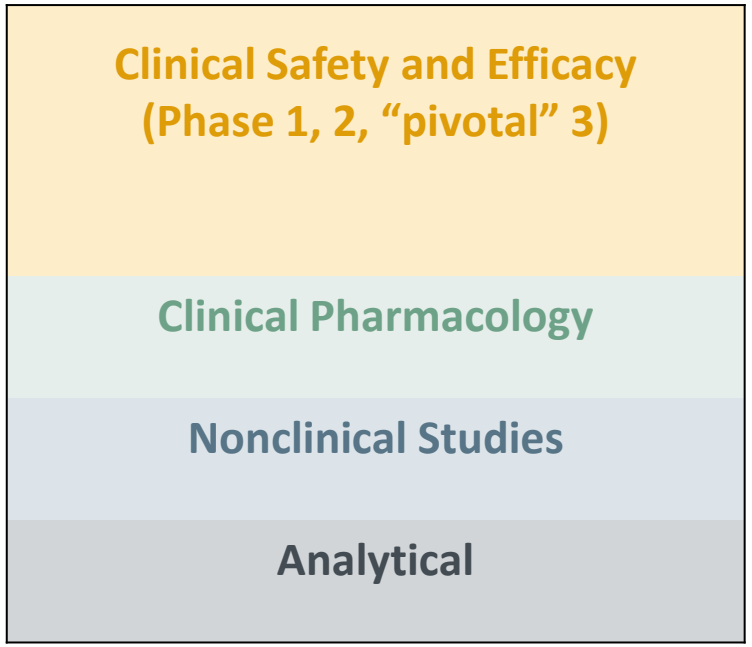
Food and Drug Administration

Different Goals for 351(a) vs. 351(k) Drug Development

***Stand-alone*: 351(a) BLA**

Proposed New Product vs. Placebo and/or Active Control

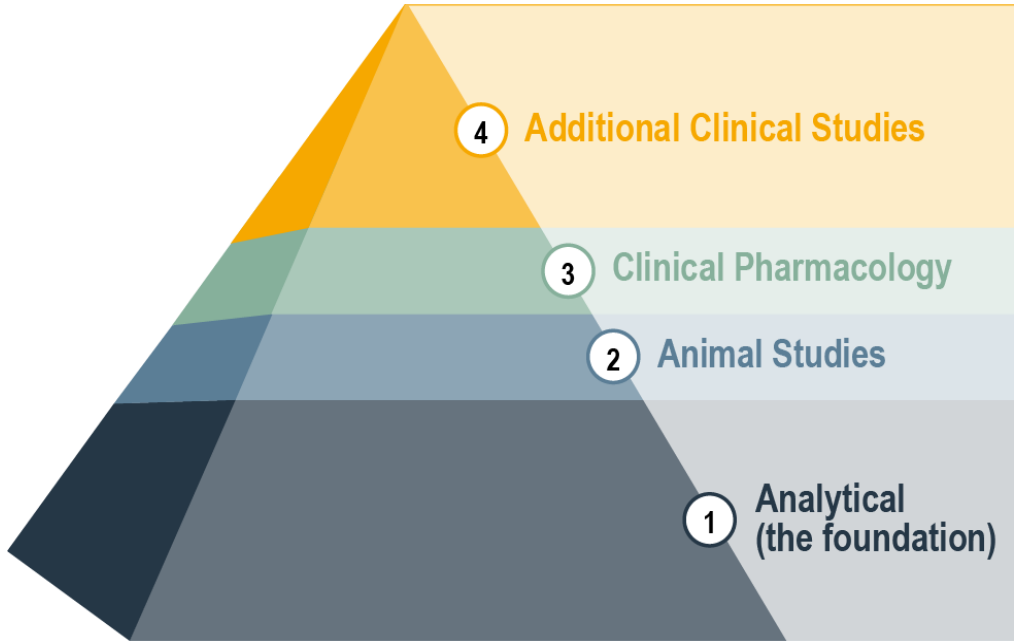
Goal: To establish safety and effectiveness of a new product



***Abbreviated:* 351(k) BLA**

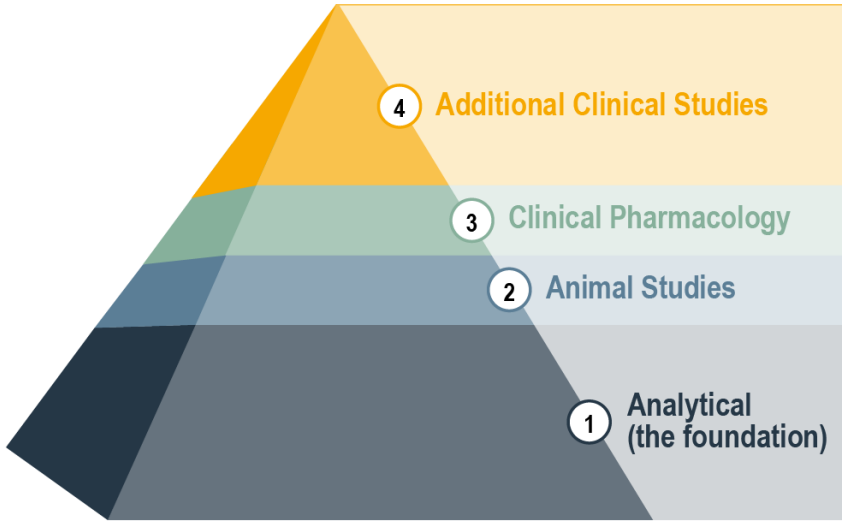
Proposed Biosimilar Product vs. Reference Product

Goal: To demonstrate biosimilarity (or interchangeability) to a reference product

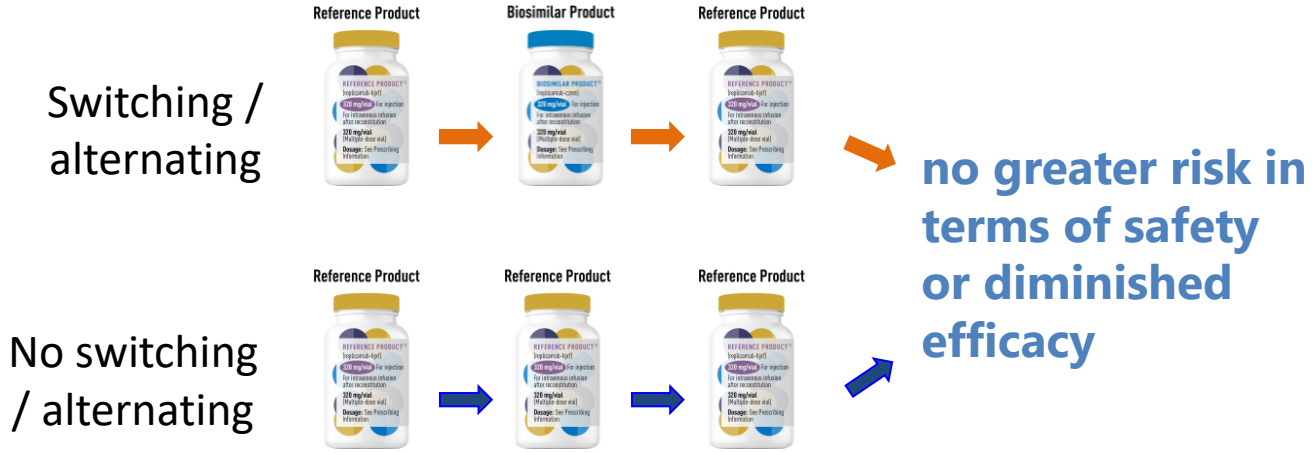


Overview of Differences Between Biosimilar and Interchangeable Products

A biosimilar product is highly similar to and has no clinically meaningful differences in terms of safety, purity, and potency (i.e., safety and effectiveness) from an FDA-approved reference product.

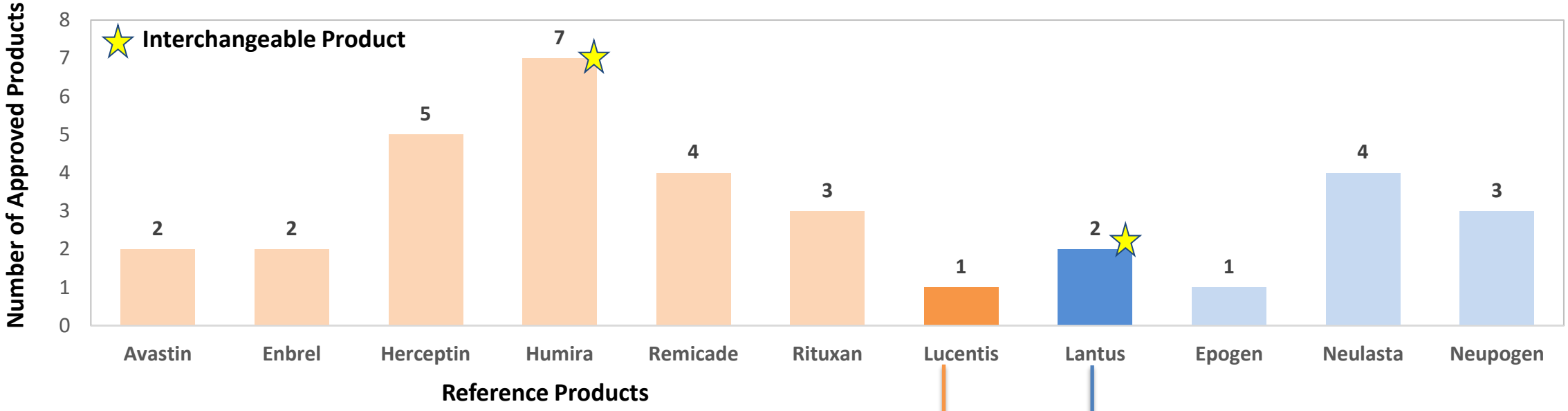


An interchangeable product is biosimilar to the reference product and can be expected to produce the same clinical result as the reference product in any given patient and that … the risk in terms of safety or diminished efficacy of alternating or switching … is not greater … (vs. without such alternation or switch)



Source: FDA guidances

The FDA Has Approved 34 Biosimilar products and 2 Interchangeable Products



N=24

1

PK similarity data

X

Comparative **efficacy** + safety data (immunogenicity)

✓

N= 10

✓

2

PK + **PD** similarity data
(in lieu of comparative efficacy data)

X

Comparative safety data (immunogenicity)

See the FDA's Purple Book for lists of licensed biological products, with reference product exclusivity and biosimilarity or interchangeability evaluations
https://go.usa.gov/xz6Ud

Approaches to Streamline Biosimilar/Interchangeable Programs

Adopt the approach of PK + PD similarity studies

Benefits of PK and PD studies over comparative clinical studies:

- Smaller sample size (higher sensitivity with PD endpoints vs. clinical endpoints)
- Shorter study duration
- Ease of recruitment when feasible in healthy subjects

See the FDA guidance Clinical Pharmacology Data to Support a Demonstration of Biosimilarity to a Reference Product

Certain studies are not necessary when scientifically justified

For example, comparative immunogenicity data for insulin products may not be needed:

See the FDA guidance Clinical Immunogenicity Considerations for Biosimilar and Interchangeable Insulin Products

More scientific innovations are needed!

Milestones and FDA Initiatives to Advance Biosimilar and Interchangeable Products

March 2010
Biologics Price Competition and Innovation Act of 2009 (BPCIA)

2012-Present
Biosimilar Guidances
U.S. FOOD & DRUG ADMINISTRATION

July 2018
Biosimilars Action Plan: Balancing Innovation and Competition

September 2021
Public Workshop
Pharmacodynamic Biomarkers for Biosimilar Development and Approval
Duke MARGOLIS CENTER for Health Policy
U.S. FOOD & DRUG ADMINISTRATION

December 2021
Curriculum Materials for Health Care Degree Programs-Biosimilars

March 2022
Regulatory Science Funding Opportunity

April 2022
Today's Webinar!

- Reception/expansion of PK + PD approach
- Ways to improve adoption
- Ways to increase efficiency in biosimilar development

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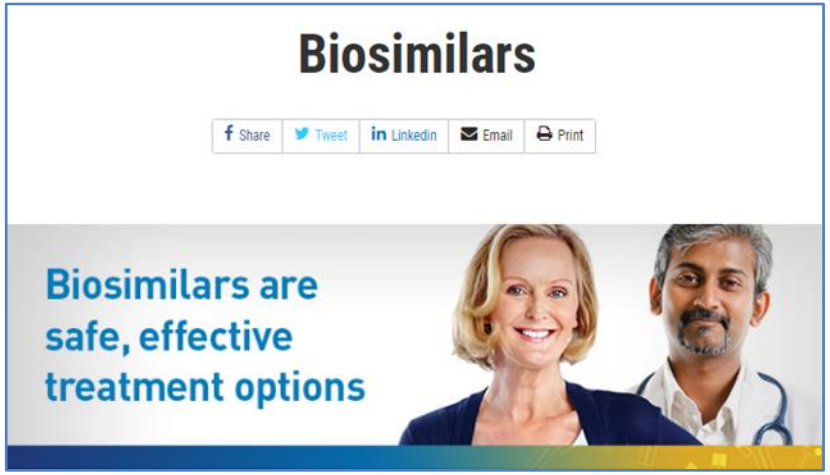
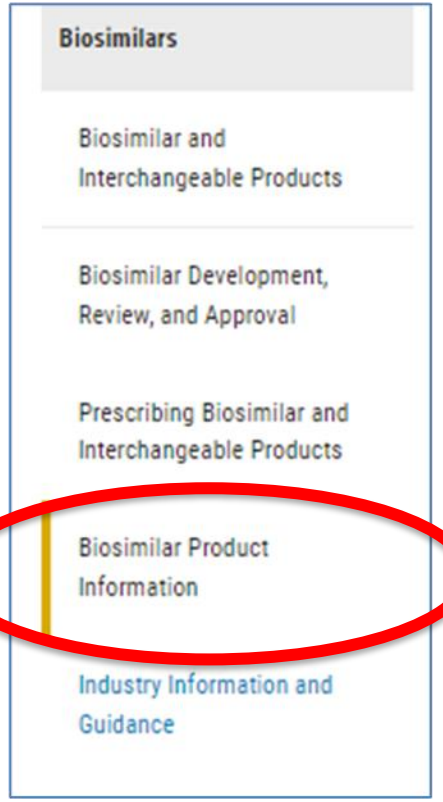
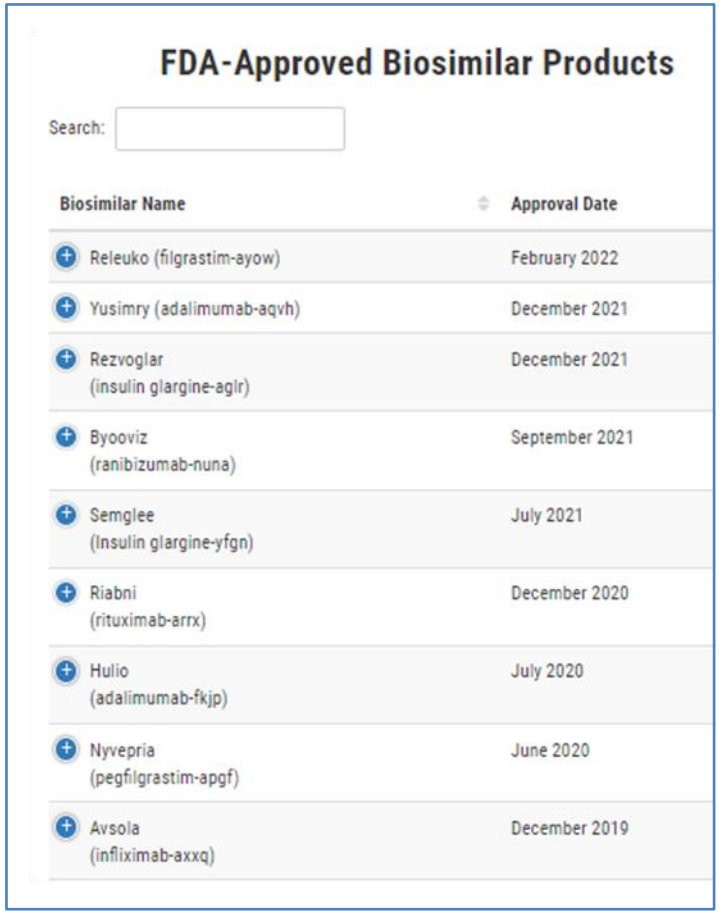
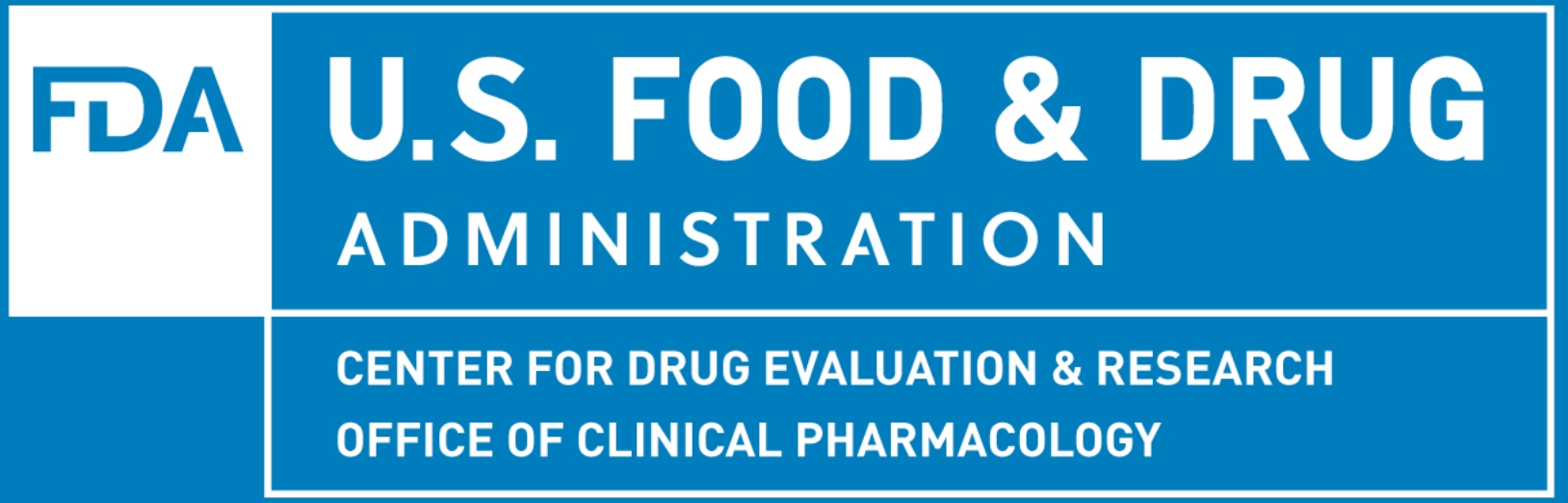
FDA Resources For Biosimilar Products Are Available Online!

https://www.fda.gov/drugs/therapeutic-biologics-applications-bla/biosimilars





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