

FDA Drug Topics

Biosimilar and Interchangeable Biological Products: Basic Concepts and Practical Resources

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CDER/FDA



**U.S. FOOD & DRUG
ADMINISTRATION**



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Overview



- Introduction to Biosimilar and Interchangeable Biological Products
 - Scientific and Regulatory Aspects
- FDA's Approach to the Development of Biosimilars
- Using Biosimilar and Interchangeable Products
- Progress To Date
 - Biosimilars Action Plan
- An Overview of The Purple Book: Database of Licensed Biological Products
- Resources for Health Care Providers

Learning Objectives



1. Describe how biologics differ from small molecules (size, complexity, manufacturing) and explain why some biologics cannot be copied exactly.
2. Compare and contrast the development, statutory requirements, and approval process for new biologics and for biosimilars/interchangeables.
3. Compare and contrast the requirements for generics and biosimilar/interchangeables and discuss the availability of insulin products.
4. Review a case study of an approved biosimilar product.
5. Describe and explain the new resources available for health care providers to learn more about biosimilar and interchangeable products through the enhanced Purple Book and other FDA educational resources.

Introduction to Biosimilarity Concepts

Biosimilars Approved by FDA in 2020	
Nyvepria (pegfilgrastim-apgf)	Hulio (adalimumab-fkjp)
Riabni (rituximab-arrx)	
Biosimilars Approved by FDA in 2019	
Ontruzant (trastuzumab-dttb)	Ruxience (rituximab-pvvr)
Trazimera (trastuzumab-qyyp)	Hadlima (adalimumab-bwwd)
Eticovo (etanercept-ykro)	Ziextenzo (pegfilgrastim-bmez)
Kanjinti (trastuzumab-anns)	Abrilada (adalimumab-afzb)
Zirabev (bevacizumab-bvzr)	Avsola (infliximab-axxq)
Biosimilars Approved by FDA in 2018	
*Retacrit (epoetin alfa-epbx)	Udenyca (pegfilgrastim-cbqv)
Fulphila (pegfilgrastim-jmdb)	*Truxima (rituximab-abbs)
Nivestym (filgrastim-aafi)	Herzuma (trastuzumab-pkrb)
Hyrimoz (adalimumab-adaz)	
Biosimilars Approved by FDA in 2017	
Renflexis (infliximab-abda)	*Ogivri (trastuzumab-dkst)
Cyltezo (adalimumab-adbm)	Ixifi (infliximab-qbtx)
*Mvasi (Bevacizumab-awwb)	
Biosimilars Approved by FDA in 2016	
*Inflectra (infliximab-dyyb)	*Amjevita (adalimumab-atto)
*Erelzi (etanercept-szsz)	
Biosimilars Approved by FDA in 2015	
*Zarxio (filgrastim-sndz)	

Biosimilars: Current Stats



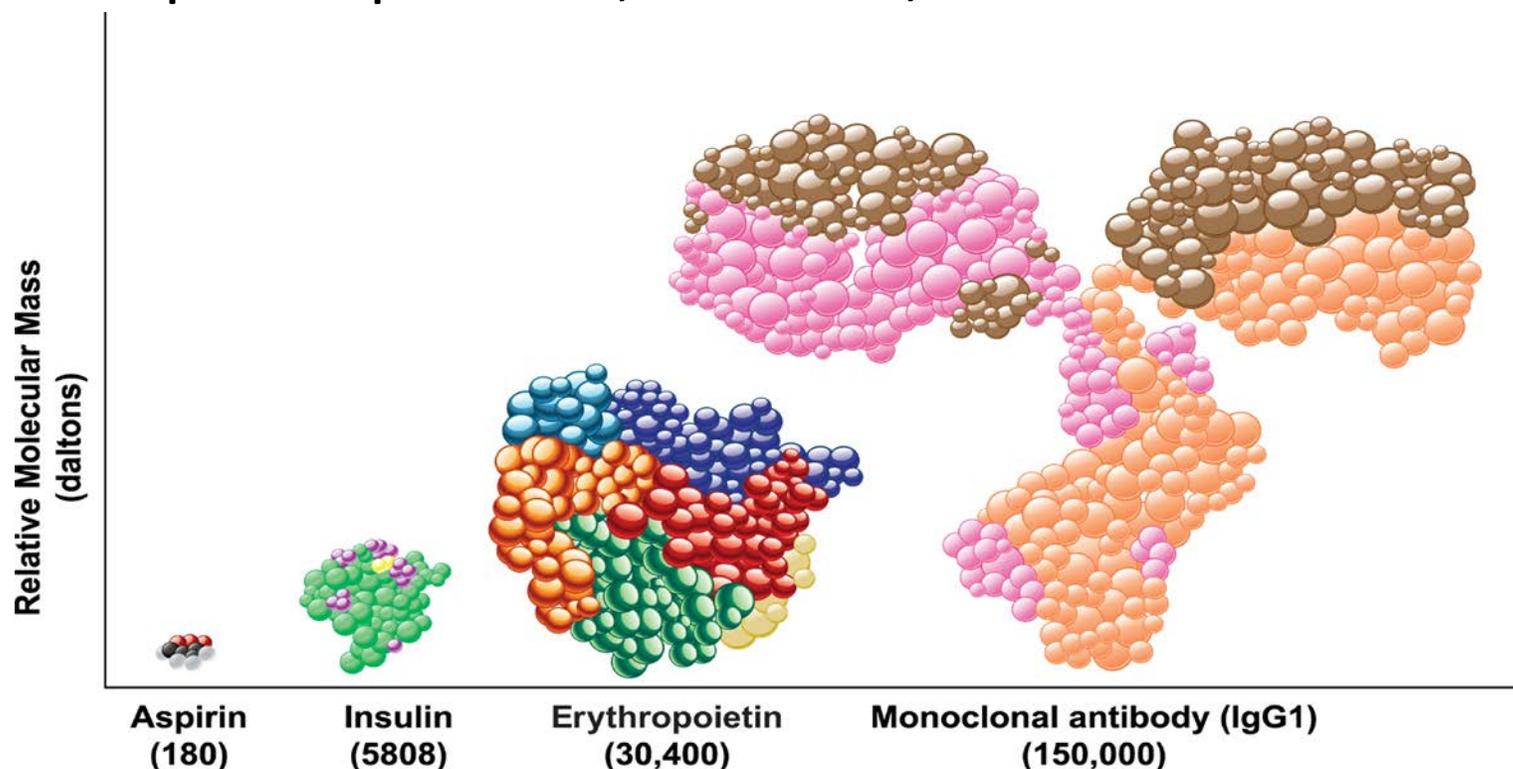
Reference Product	Approved = 29	Marketed = 19
Herceptin	5	5
Humira	6	0
Remicade	4	3
Neulasta	4	3
Neupogen	2	2
Avastin	2	2
Rituxan	3	3
Enbrel	2	0
Epogen	1	1

Highlighted = currently marketed

*Advisory Committee Meeting Held

Biological Products

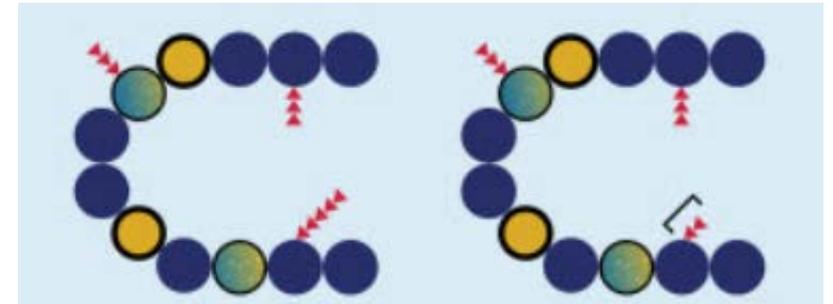
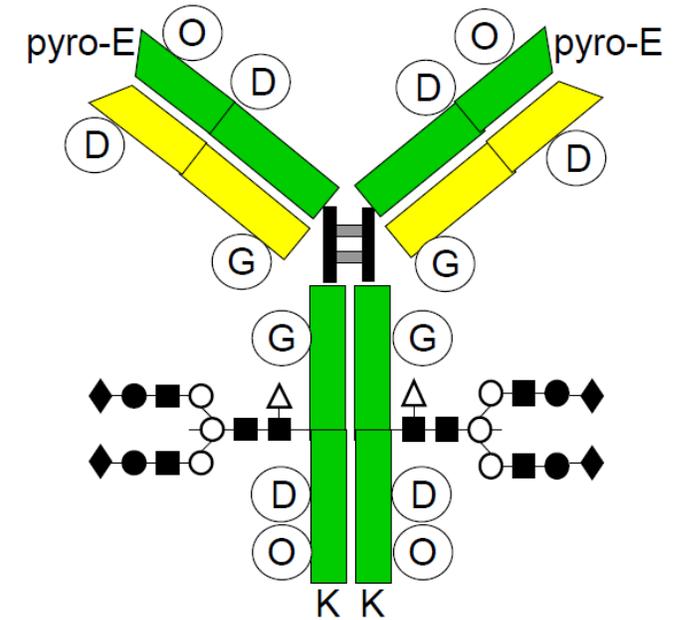
- Biologics are generally large and recombinantly produced from living systems
- They range in size and complexity
- Examples: therapeutic proteins, vaccines, monoclonal antibodies



Biological Products: Complexity



- Cells can make exact copies of protein but other add-ons and changes may occur, resulting in different versions of the molecule
- Millions of slightly different versions of the same protein or antibody per dose or batch
- Biologics manufacturers try to keep a consistent mix of variants across batches of their products and over time



Basics of Biosimilarity



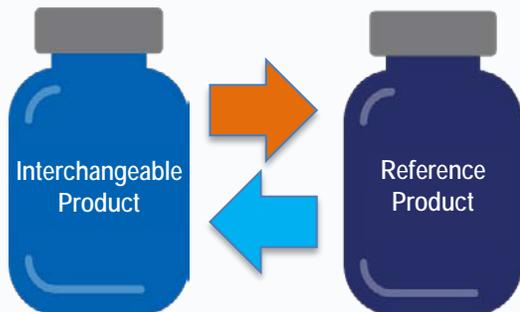
Reference Product (RP)

A reference product is the single biological product, already approved by FDA, against which a proposed biosimilar product is compared



Biosimilar Product

A biosimilar is a biological product that is **highly similar and has no clinically meaningful differences** from an existing FDA-approved reference product

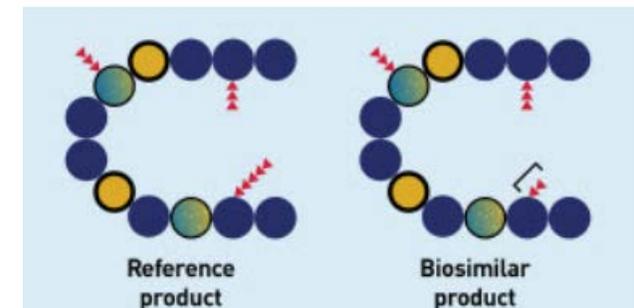


Interchangeable Product

An interchangeable is a biosimilar and expected to produce the same clinical result as the RP in any given patient. It can be substituted for the RP without the intervention of the prescribing health care provider

Can Most Biologics be Copied Exactly? No

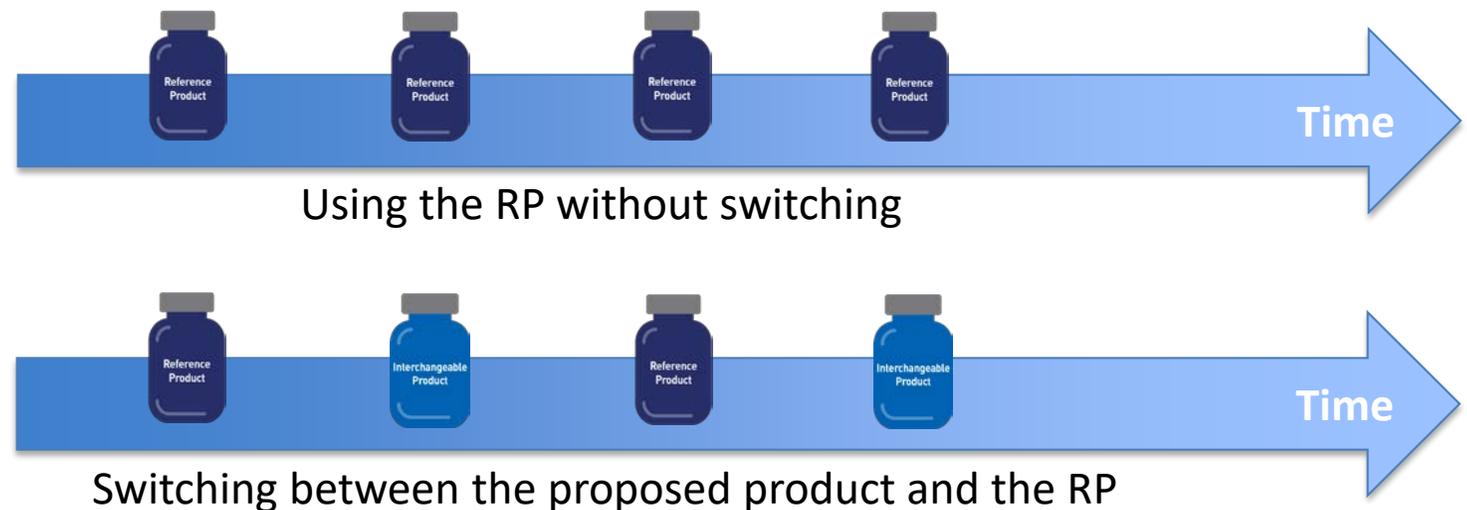
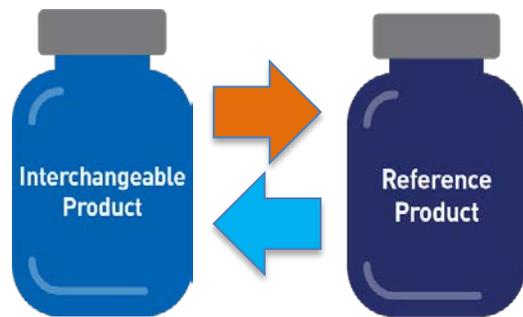
- Most biologics are mixtures of variants
- Using advanced scientific analysis, molecular patterns and profiles emerge
- Biosimilars try to match the patterns and variations of the reference product
- Both the reference product (RP) and biosimilar (BS) contain these variants and try to keep a consistent mix



Standards for Interchangeable Biosimilar Products



- An interchangeable biosimilar product may be substituted for the RP without the intervention of the health care provider who prescribed the RP, subject to state laws
- Provide information or data intended to help inform what might happen with substitution:
 - Switching between the proposed product and the reference product does not increase safety risks or decrease effectiveness compared to using the reference product only
 - The proposed product can be expected to provide the same clinical result as the reference product in “any given patient”



Transition Biological Products

- Some protein products historically were approved in new drug applications under section 505(c) of the FD&C Act
 - e.g., insulin and insulin analogs, somatropin, pancreatic enzyme products, and certain reproductive hormones
- BPCI Act amended the definition of “biological product” in section 351(i) of the PHS Act to include a “protein (except any chemically synthesized polypeptide)”
- The Further Consolidated Appropriations Act, 2020, further amended the definition of “biological product” in section 351(i) of the PHS Act to remove the parenthetical “(except any chemically synthesized polypeptide)” from the statutory category of “protein”

Transition Biological Products cont.

- FDA has issued a regulation that describes its interpretation* of the term “protein” in the amended statutory definition of “biological product”: Any alpha amino acid polymer with a specific, defined sequence that is greater than 40 amino acids in size
- On March 23, 2020, an approved NDA for a “biological product” was deemed to be an approved 351(a) BLA for the biological product in accordance with the BPCI Act
- Once this transition occurred, applicants could seek licensure under section 351(k) of products that are biosimilar to, or interchangeable with, transitioned reference products

* Definition of the Term “Biological Product”, [Final Rule February 21, 2020 \(85 FR 10057\)](#)

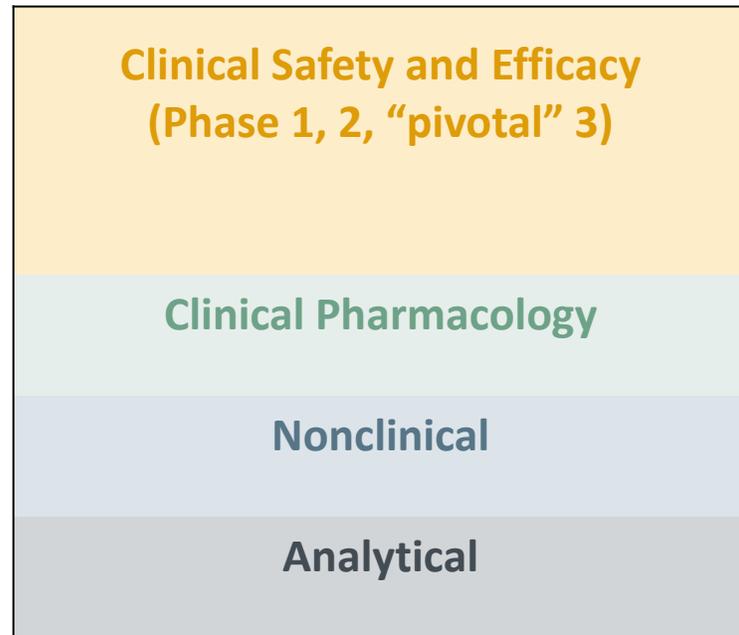
FDA's Approach to the Development of Biosimilars and a Case Study

Different Goals for “Stand-alone” vs. Biosimilar Development



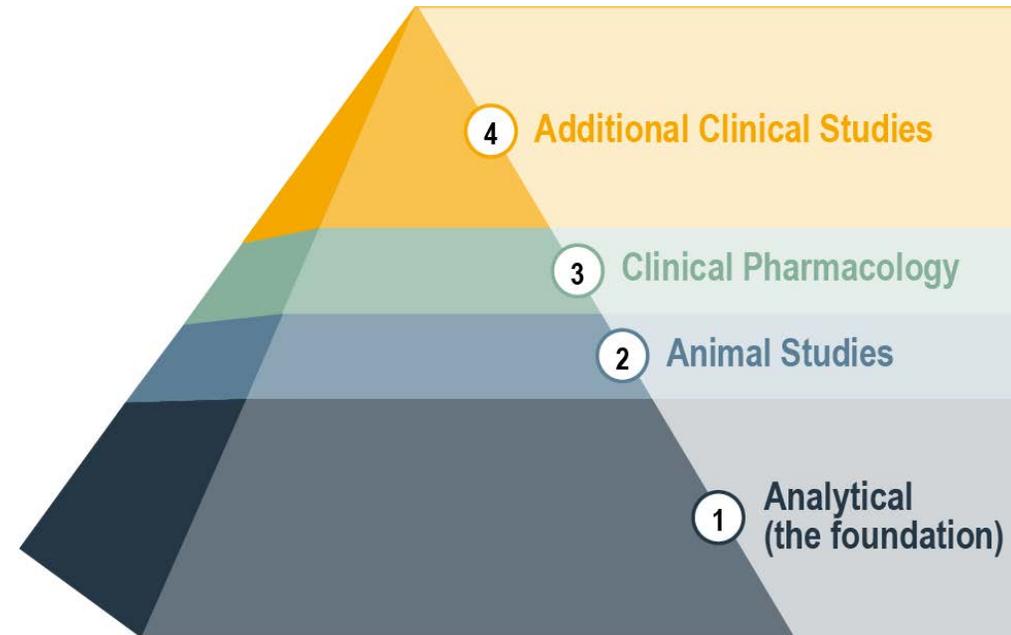
“Stand-alone”: 351(a) BLA

Goal: To establish *de novo* safety and efficacy of a new product



“Abbreviated”: 351(k) BLA

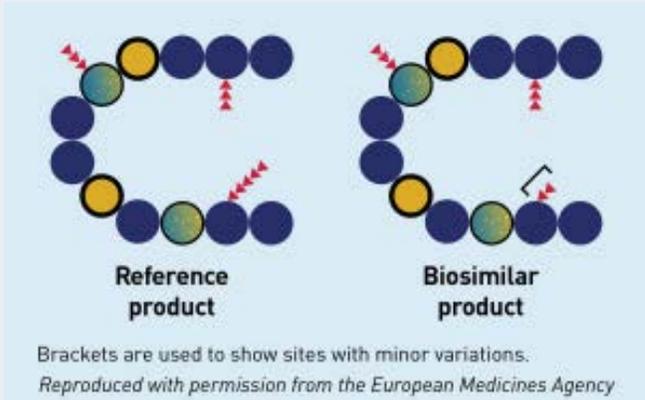
Goal: To demonstrate biosimilarity (or interchangeability) to a reference product



What does this difference mean from a development perspective?

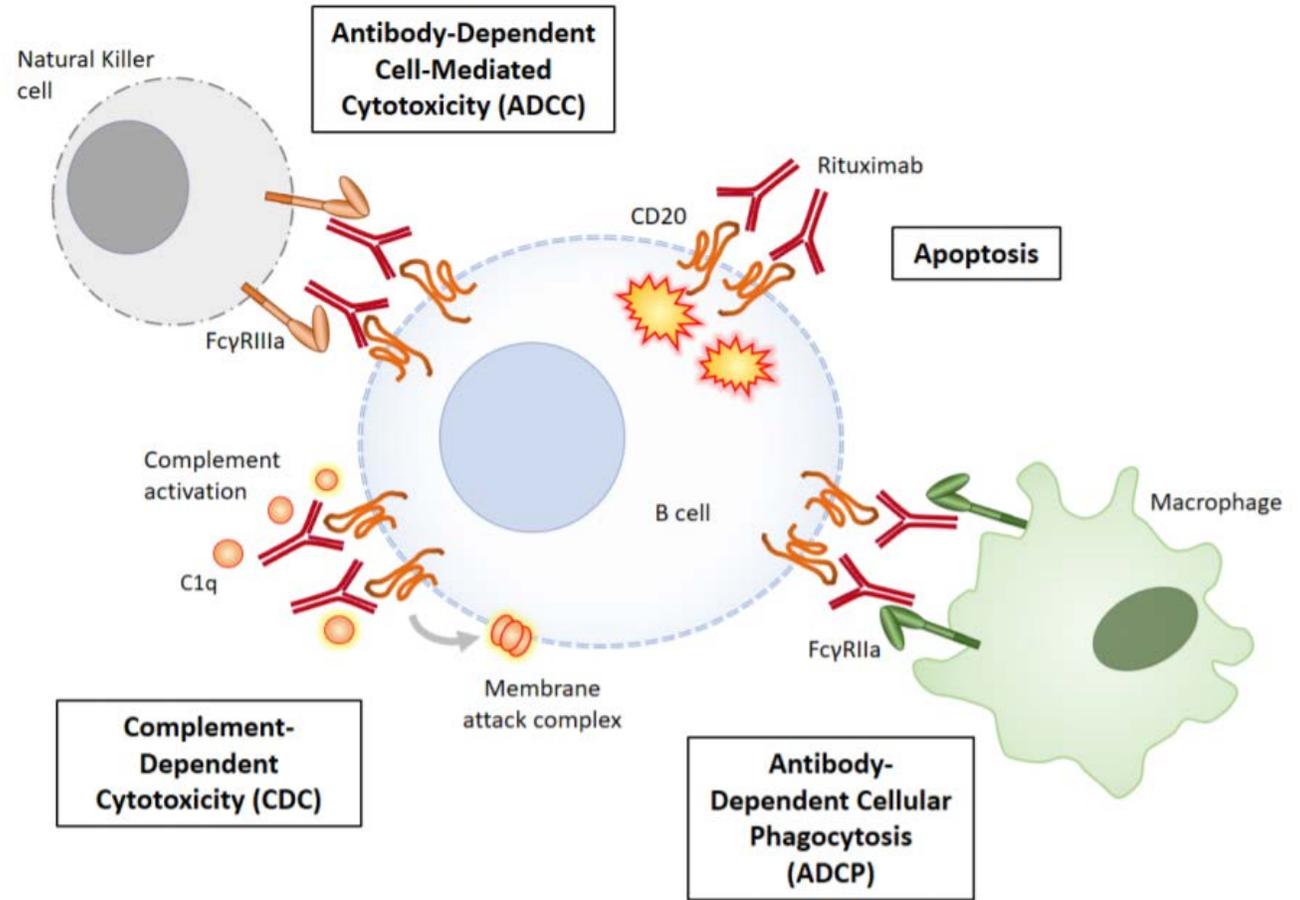
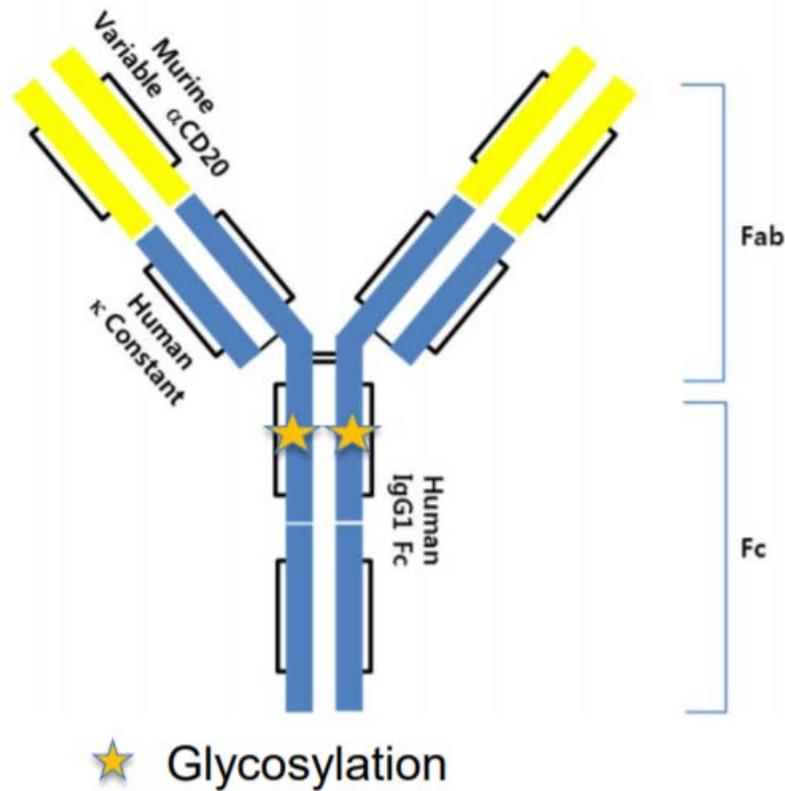
Generic vs. Biosimilar



	Generic (Orange Book)	Biosimilar (Purple Book)
Assessment	Same Active Ingredient PK Bioequivalence	Highly Similar No Clinically Meaningful Differences
Example schematic of product comparisons. Comparative Analytical data expected for both products	 <p>Reference Listed Drug = Generic Drug</p>	 <p>Reference product vs. Biosimilar product</p> <p>Brackets are used to show sites with minor variations. Reproduced with permission from the European Medicines Agency</p>
Clinical Pharmacology Studies	Demonstrate PK Bioequivalence	Demonstrate PK/PD similarity, when applicable
Other clinical study(ies)	-	Assess immunogenicity; may further evaluate safety and efficacy

Both are “abbreviated” development pathways that have distinct statutory requirements and scientific expectations supporting their approval.

Case study of Data Used to Support Biosimilarity



CT-P10, proposed biosimilar to US-Rituximab

Case study of Analytical Data Used to Support Biosimilarity

Quality Attributes Evaluated



Primary structure

- Intact molecular weight
- Amino acid sequence
- Extinction coefficient

Higher order structure

- Secondary structure
- Tertiary structure
- Thermal stability
- Disulfide bonds

Glycosylation

- Afucosylation
- Galactosylation
- High Mannose content
- Sialylation

Biological activity

- CDC
- ADCC
- ADCP
- Apoptosis

- CD20 binding
- C1q binding
- FcγRIIIa V type binding
- FcγRIIIa F type binding
- FcγRIIIb binding
- FcγRIIa binding
- FcγRIIb binding
- FcγRI binding
- FcRn binding

Protein Concentration

- Concentration in mass per volume

Size Variants

- Monomer, dimer, high and low molecular weight species
- Intact IgG, “non-assembled forms” of heavy chain and light chain, fragments

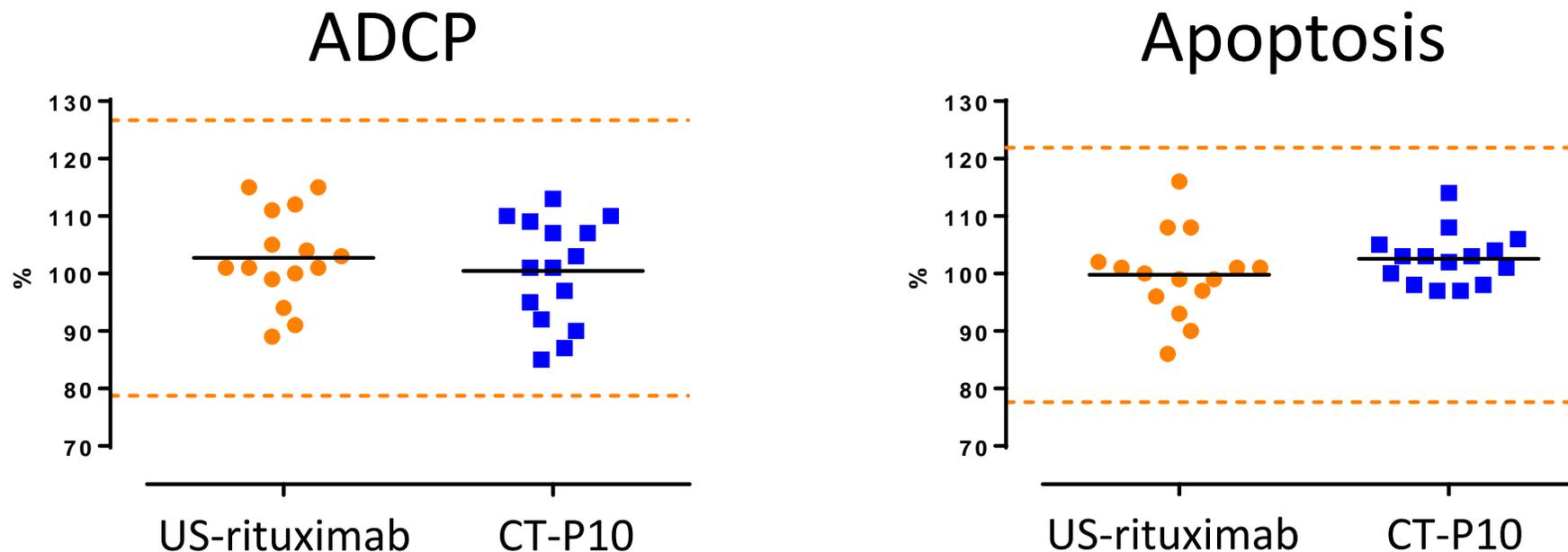
Charge Variants

- Acidic, main, basic species

Post-translational Modifications

- Deamidation, Oxidation, Glycation, N- and C-terminal variants

Case study – Potency Example



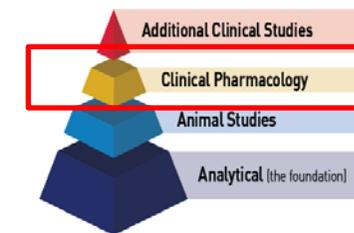
The black bars represent the mean percentages.

The orange lines represent the QR limits (mean \pm 3SD of the US-rituximab).

The relative ADCP and apoptotic activities of all CT-P10 lots are within the Quality Range (QR) limits of US-rituximab lots.

Case study – Overall Conclusions From the Comparative Analytical Assessment

- The comparative analytical data demonstrate that CT-P10 is highly similar to US-rituximab notwithstanding minor differences in clinically inactive components.
- The analytical results add to the totality of the evidence to support a demonstration of biosimilarity between CT-P10 and US-rituximab.



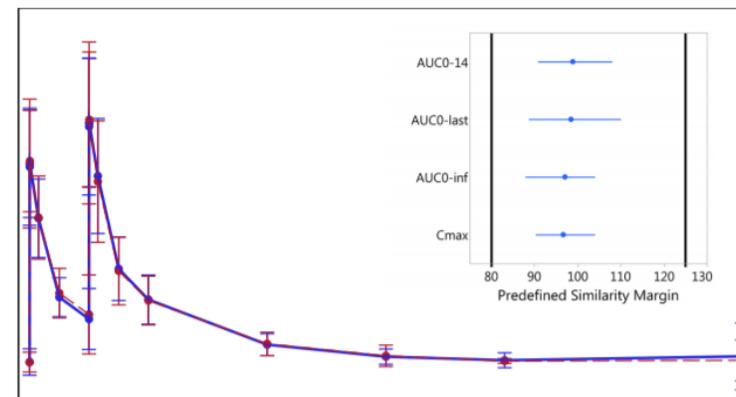
Comparative Human PK and PD Data

- PK and/or PD is generally considered the most sensitive clinical study/assay in which to assess for differences between products, should they exist
- PK
 - Demonstrate **PK similarity** in an adequately sensitive population to detect any differences, should they exist
- PD
 - **Similar PD** using PD measure(s) that reflects the mechanism of action (MOA) or reflects the biological effect(s) of the drug
- Clinical PK data generally will be expected; PD data desirable (case by case)
- **PK and PD similarity** data supports a demonstration of biosimilarity with the assumption that similar exposure (and pharmacodynamic response, if applicable) will provide **similar efficacy and safety** (i.e., an exposure-response relationship exists)

Case study – PK Similarity Study

- Parallel-group study, two doses, 1000 mg IV administration in patients with Rheumatoid Arthritis (RA)
- PK parameters – AUC_{0-inf} , AUC_{0-last} , AUC_{0-14d} , and C_{max}
- The geometric mean ratios and 90% CIs are within the pre-specified 0.80-1.25 range
- PK study results support a demonstration of no clinically meaningful differences and add to the totality of evidence to support a demonstration of biosimilarity

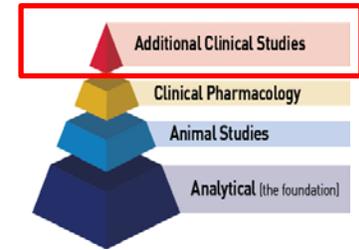
Mean (SD)
serum
concentration
(mcg/mL)



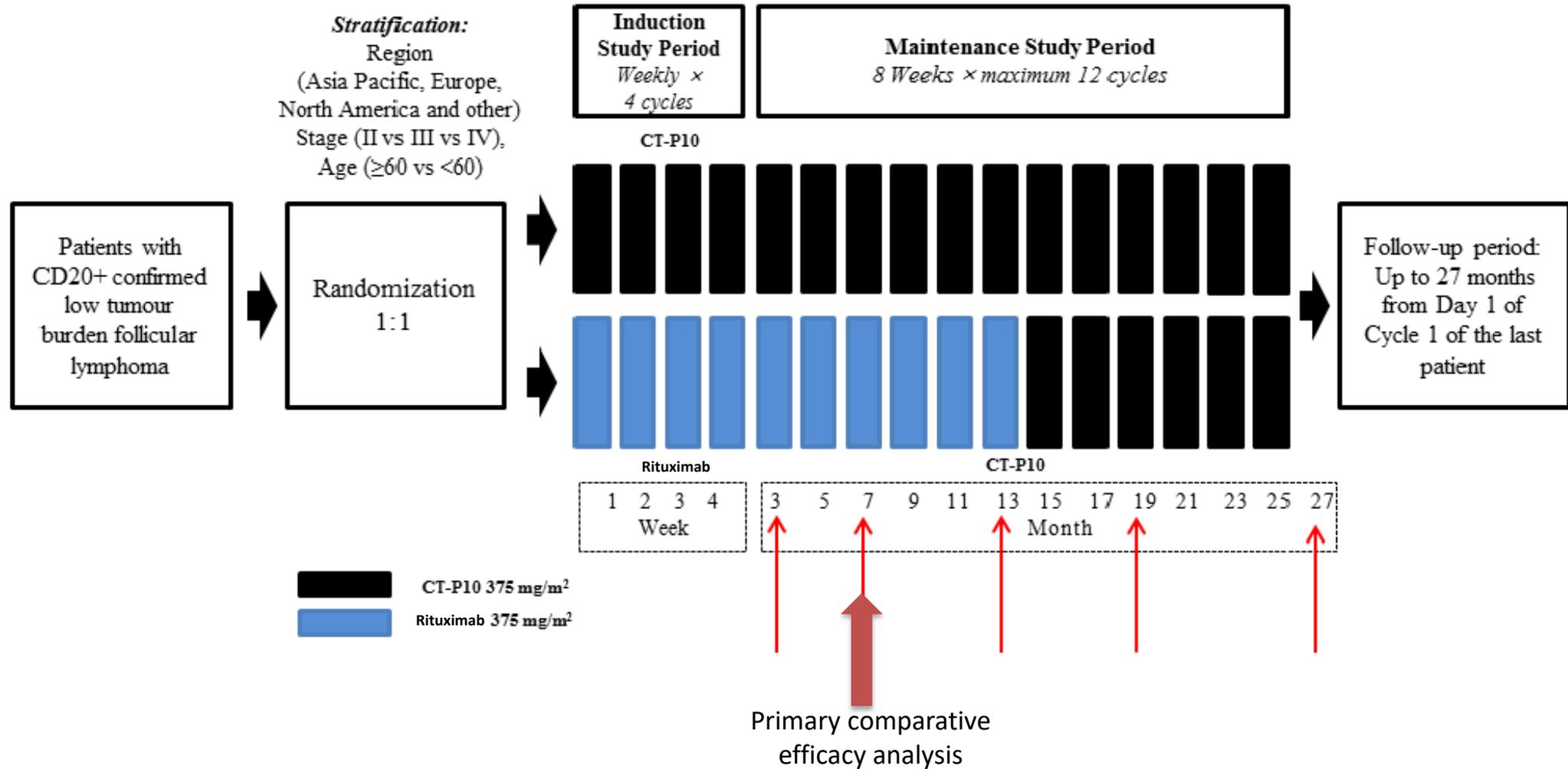
Time (Days)

Comparative Clinical Study

- When a comparative clinical study is needed it should use endpoints that can assess **clinically meaningful differences** between the proposed product and the reference product
- Population, endpoint, sample size and study duration should be **adequately sensitive to detect differences**, should they exist
- Generally, a study is designed to establish statistical evidence the proposed product is neither inferior nor superior. Typically, an equivalence design would be used, but other designs may be justified
- Assessment of safety and immunogenicity is expected



Case study – Clinical Study in Subjects with Low Tumor Burden Follicular Lymphoma



Case study – Clinical Study Endpoints and Margin Selection



- Primary endpoint: overall response rate (ORR) at 7 months
- Margin Selection of $\pm 17\%$
 - Treatment effect estimated from historical data (public knowledge)
 - Margin designed to preserve 77% of the rituximab treatment effect
- Test for Equivalence
- The 90% CI was within the equivalence margin (-17%, +17%)

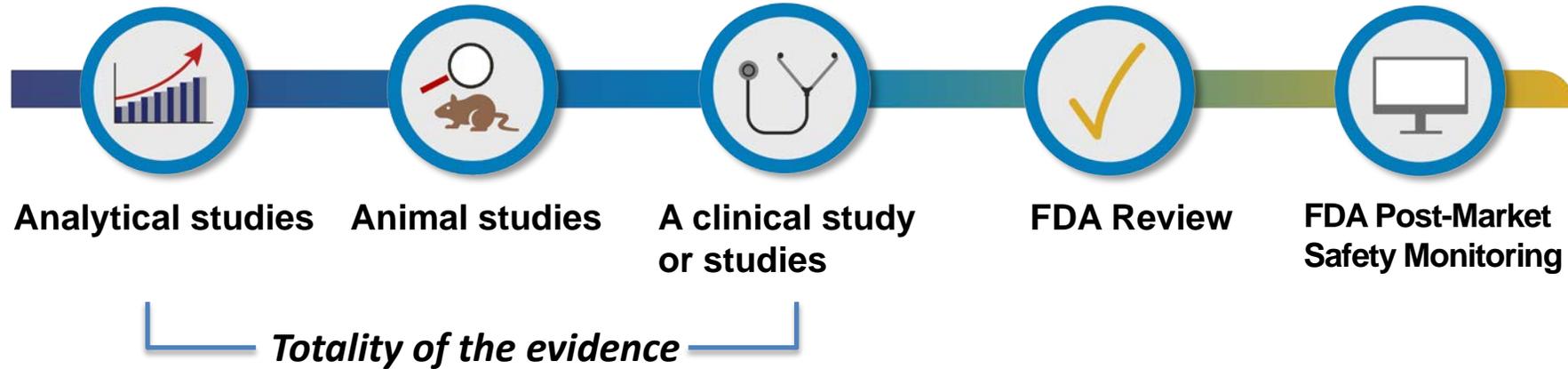
	CT-P10 (N = 130)	US- Rituximab (N = 128)
Overall Response, n (%)	108 (83.1)	104 (81.3)
ORR Difference, (90% CI)	1.8 (-6.2, 10.0)	

Case Study - Summary

- Comparative analytical data demonstrate that CT-P10 and US-rituximab are highly similar, notwithstanding minor differences in clinically inactive components
- PK and immunogenicity data in patients with RA support the demonstration of no clinically meaningful differences
- Clinical data obtained in patients with LTBFLL and AFL support a demonstration that there are no clinically meaningful differences between CT-P10 and US-rituximab
- The totality of the data support the Applicant's claim that CT-P10 is biosimilar to US-licensed rituximab

Summary

Goal: To establish biosimilarity between proposed product and reference product; not to re-establish safety and effectiveness.



Approval is based on the **integration of various information and the totality of the evidence submitted** by the applicant to provide an overall assessment that the proposed product is biosimilar to the reference product.

Using Biosimilar and Interchangeable Products

Using Reference, Biosimilar, and Interchangeable Products



- Patients and health care providers *can be confident in the **safety** and **effectiveness** of a biosimilar product* as for the reference product.
- All approved reference products and biosimilar products meet FDA's *rigorous standards* for the indications described in product labeling.
- Once available in the U.S., states may permit a pharmacist to substitute an interchangeable product for the reference product without consulting the prescriber.

Biosimilar & Original Biologic

- ✓ Same benefits
- ✓ Same potential side effects
- ✓ Same strength and dosage
- ✓ Given the same way

Biosimilars are made with the same types of natural sources as the original biologic they were compared to — and **provide the same treatment benefits.**

The infographic features a smartphone on the left displaying a checklist of similarities between biosimilars and original biologics. To the right, a text box explains that biosimilars use the same natural sources as the original biologics and provide the same treatment benefits. The text "provide the same treatment benefits." is highlighted in a red box.

What to expect with a Biosimilar?

- Approved prescribing information summarizes the scientific information health care practitioners need for safe and effective use of the product.
- Labeling:
 - The Highlights Section contains a “Biosimilarity Statement” describing the biosimilar product’s relationship to its reference product
 - A biosimilar product is not required to have the same labeling as its reference product. Biosimilar product labeling may differ from the reference product labeling, for example it may be licensed for a subset of indications
 - FDA recommends that biosimilar product labeling incorporate relevant data and information from the FDA approved labeling for the reference product, along with any appropriate modifications specific to the biosimilar product
 - **For specific product information, visit Drugs@FDA**





Key Takeaways

Fact: FDA's high standards for approval means healthcare professionals and patients can be confident in the safety and effectiveness of a biosimilar product.

Fact: Differences between the biosimilar and reference product may be expected due to both products' molecular complexity, but such differences are not clinically meaningful.

Fact: Biosimilar labeling is not required to be the same as the reference product, but is expected to incorporate relevant data and information from reference product labeling.

Fact: FDA's approval of an interchangeable biological product does not indicate a higher standard of biosimilarity, but that it underwent further evaluation to allow it to be substituted for the reference product without consulting the health care prescriber.

Fact: Patients and healthcare providers do not need to wait for a biosimilar product to "become" an interchangeable product (as there may be business reasons a sponsor does not seek interchangeability). Biosimilars are safe and effective, just like the reference product they were compared to.

Progress To Date

Biosimilars Action Plan (BAP)

1. Improving the efficiency of the biosimilar and interchangeable product development and approval process
2. Maximizing scientific and regulatory clarity for the biosimilar product development community
3. Developing effective communications to improve understanding of biosimilars among patients, clinicians and payors
4. Supporting market competition by reducing gaming of FDA requirements or other attempts to unfairly delay competition

BIOSIMILARS ACTION PLAN:
Balancing Innovation
and Competition

July 2018

BAP in Review (cont.)



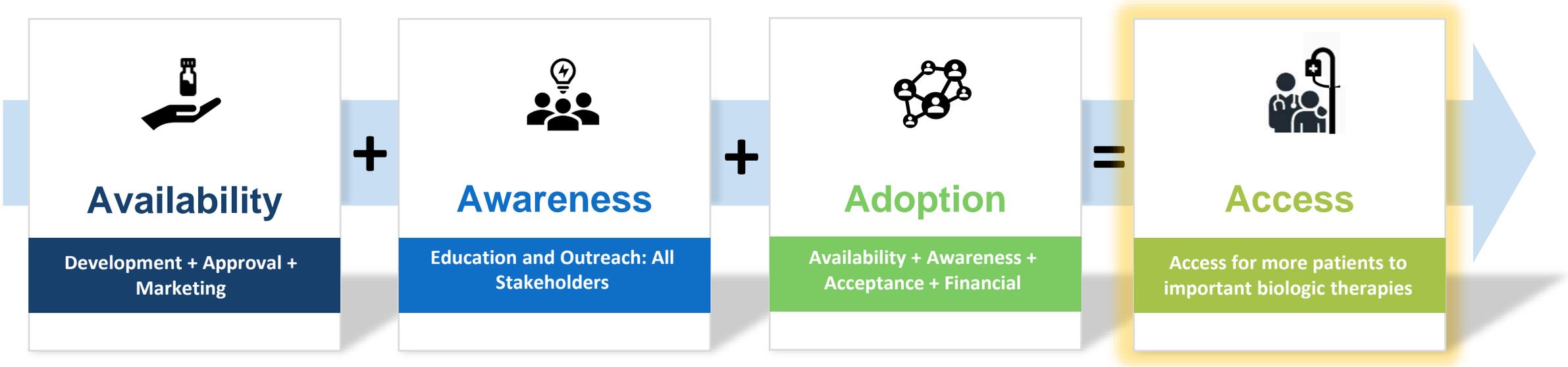
Completed Activities

Key In-Progress Activities

 Held Public Meeting on Insulin Products	 Released Draft Guidance, "Promotional Labeling and Advertising Considerations for Reference and Biosimilar Products – Q & A"	 Released "Biosimilar Basics" for patients including materials in Spanish	 Released Enhanced Purple Book	 Improving standardized review templates specific to 351(k) BLAs
 Released Draft Guidance, "Licensure for Fewer Than All Conditions of Use"	 Released Draft Guidance, "Biosimilarity and Interchangeability: Additional Q & A"	 Stakeholder Meetings	 Oversee the transition of biological products	 Identify and develop additional guidances
 Held Public Hearing between FTC and FDA	 Released Draft Guidance, "Clinical Immunogenicity of Biosimilar and Interchangeable Insulin Products"	 Other Engagement Activities	 Develop additional biosimilars educational resources	 Provide product developers with information resources and development tools

Supporting a competitive marketplace

Solving The Equation for Patient Access



Resources for Health Care Providers

Purple Book



The Purple Book is available as a PDF format on FDA.gov.



Home / Drugs / Development & Approval Process | Drugs / How Drugs are Developed and Approved / Types of Applications / Therapeutic Biologics Applications (BLA) / Purple Book: Lists of Licensed Biological Products with Reference Product Exclusivity and Biosimilarity or Interchangeability Evaluations

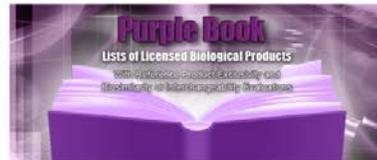
Purple Book: Lists of Licensed Biological Products with Reference Product Exclusivity and Biosimilarity or Interchangeability Evaluations

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Therapeutic Biologics Applications (BLA)

Biosimilars

The "Purple Book" lists biological products, including any biosimilar and interchangeable biological products, licensed by FDA under the Public Health Service Act (the PHS Act).



The Purple Book includes the date a biological product was licensed under 351(a) of the PHS Act and whether FDA evaluated the biological product for reference product exclusivity under section 351(k)(7) of the PHS Act.

The Purple Book, in addition to the date licensed, also includes whether a biological product licensed under section 351(k) of the PHS Act has been determined by FDA to be biosimilar to or interchangeable with a reference biological product (an already-licensed FDA biological product). The Patient Protection and Affordable Care Act (Affordable Care

Content current as of: 11/18/2019

• CDER List of Licensed Biological Products (PDF - 217 KB)
Updated: 11/18/2019

• CDER List of Licensed Biological Products (PDF - 140 KB)
Updated: 11/18/2019

• More Information on the Lists

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Center for Biologics Evaluation and Research
List of Licensed Biological Products with (1) Reference Product Exclusivity and (2) Biosimilarity or Interchangeability Evaluations to Date

BLA STN	PRODUCT (PROPE) NAME	PROPRIETARY NAME	DATE OF LICENSURE (mo/day/yr)	DATE OF FIRST LICENSURE (mo/day/yr)	REFERENCE PRODUCT EXCLUSIVITY EXPIRE DATE (mo/day/yr)	INTERCHANGEABLE/BIOSIMILAR (B)	WITHDRAWN
125296	Adenovirus Type 4 and Type 7 Vaccine, Live, Oral		01/12/2011				
102128	Albumin (Human)	Plasbumin-5, Plasbumin-20, Plasbumin-25, Albumin	00/01/1942	NA	NA		
102452	Albumin (Human)	Buminate, Buminate 25%, Buminate 5%, Buminate 10%, Plasbumin	3/3/1954	NA	NA		
102893	Albumin (Human)		9/7/1975	NA	NA		
102265	Albumin (Human)	Albumin	10/1/1975	NA	NA		
102476	Albumin (Human)	Albumin	9/15/1976	NA	NA		
102822	Albumin (Human)	Albumin; Albumin-5; Albumin-20; Albumin-25	2/17/1985	NA	NA		
102895	Albumin (Human)		5/17/1989	NA	NA		
125154	Albumin (Human)		10/17/2006	NA	NA		
125284	Albumin (Human)	Infbumin	6/29/2011				
125444	Albumin (Human) Alpha Allergen: Cultural Keratins and Fibronectin in Bovine Collagen	ALBUMIND	6/19/2018				
125400		IGATU1	3/9/2012				
102174	Alpha-2-Proteinase Inhibitor (Human)	Protostat, Protostat-C	12/1/1987	NA	NA		
125208	Alpha-2-Proteinase Inhibitor (Human)	Protact, Protact NP	12/12/2002	NA	NA		
125278	Alpha-2-Proteinase Inhibitor (Human)	Zemana	1/8/2005	NA	NA		
125225	Alpha-2-Proteinase Inhibitor (Human)	Alphas	7/12/2010				
102824	Animal Allergens, Standardized Cat Hair		7/11/1983	NA	NA		
102868	Animal Allergens, Standardized Cat Hair		9/12/1974	NA	NA		
102827	Animal Allergens, Standardized Cat Hair		9/12/1988	NA	NA		
102872	Animal Allergens, Standardized Cat Hair		9/12/1974	NA	NA		
102810	Animal Allergens, Standardized Cat Hair		11/19/1971	NA	NA		
102889	Animal Allergens, Standardized Cat Hair		9/12/1988	NA	NA		
102861	Animal Allergens, Standardized Cat Hair		9/12/1982	NA	NA		
102890	Animal Allergens, Standardized Cat Hair		3/13/1984	NA	NA		
125162	Antihemophilic Globulin (Human) Source	Antihemol	10/12/2015				
102821	Anti-toxin Vaccine, Adenoviral	AdTox	11/2/1975	NA	NA		
102180	Antihemophilic Factor (Human)	Keate, Keate-Del	11/9/1974	NA	NA		
102448	Antihemophilic Factor (Human)	Keate-Del	9/11/1984	NA	NA		
102863	Antihemophilic Factor (Human)	Monoclonal-P, Monoclonal	9/18/1975	NA	NA		
102332	Antihemophilic Factor (Recombinant)	Kogenate, Miltinate PL, Kogenate PL	3/25/1993	NA	NA		
102375	Antihemophilic Factor (Recombinant)	Recombinant Biotin (Human)	11/10/1993	NA	NA		
102379	Antihemophilic Factor (Recombinant)	ReFacto	3/6/2000	NA	NA		
125466	Antihemophilic Factor (Recombinant)	Reasigle	10/11/2013				
125487	Antihemophilic Factor (Recombinant), G1, Fusion protein	GLTACTE	6/26/2014				
125274	Antihemophilic Factor (Recombinant), Full Length	ECNACTE	3/16/2014				
125471	Antihemophilic Factor (Recombinant), Glucosylated, non-	GLPACTE	2/19/2010				
125264	Antihemophilic Factor (Recombinant), G2, Glucosylated	ADMPACTE	11/12/2015				
125261	Antihemophilic Factor (Recombinant), G2, Glucosylated, non-	ADPACTE	6/26/2014				
125264	Antihemophilic Factor (Recombinant), Plasma/Albumin Free Antihemophilic Factor (Recombinant), Plasma/Albumin Free	INFITRA, INFITRA SOLUTION	10/2/2009				
125263	Antihemophilic Factor (Recombinant), Plasma/Albumin Free	Advate	10/2/2009	NA	NA		

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The Purple Book Database



The new Purple Book can be found at PurpleBookSearch.fda.gov.

The screenshot shows the homepage of the Purple Book Database. At the top is a dark blue navigation bar with the FDA logo and 'U.S. FOOD & DRUG ADMINISTRATION' on the left. On the right of the bar are two buttons: 'Purple Book Glossary' and 'Search FDA.gov'. Below the navigation bar is a light purple banner with the title 'Purple Book Database of Licensed Biological Products' and decorative hexagonal icons. A left sidebar contains links: 'Purple Book Homepage', 'About Purple Book', 'User Guide', 'FAQs', and 'Download Purple Book Data'. The main content area features two paragraphs of text, a search bar with the placeholder 'Enter at least 3 letters', and two links: 'Advanced Search' and 'Database last updated: December 03, 2020'.

Purple Book
Database of Licensed Biological Products

The Purple Book database contains information on all FDA-licensed (approved) biological products regulated by the Center for Drug Evaluation and Research (CDER), including licensed biosimilar and interchangeable products, and their reference products.

The Purple Book also contains information about all FDA-licensed allergenic, cellular and gene therapy, hematologic, and vaccine products regulated by the Center for Biologics Evaluation and Research (CBER).

Enter a product's proprietary (brand) name or the nonproprietary (proper) name to find related products and click on a product from the results below to see the product details.

[Advanced Search](#) [Database last updated: December 03, 2020](#)

Purple Book Homepage

[About Purple Book](#)

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Purple Book's New Features

The new database provides patients, payors, clinicians, and others with an accessible, easy-to-use online search engine with more information about FDA-approved biological products, including biosimilar and interchangeable biological products.

The searchable database utilizes new features tailored to different user needs, including:

- Simple and Advanced Search options
- Auto-suggest search function
- Additional search filters
- Data download options
- Links to product labels
- Ability to show/hide sortable columns of information
- Ability to print or export search results
- Searchable glossary of terms



Simple Search



Purple Book Database of Licensed Biological Products



Purple Book Homepage

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FAQs



Download Purple Book Data

The Purple Book database contains information on all FDA-licensed (approved) biological products regulated by the Center for Drug Evaluation and Research (CDER), including licensed biosimilar and interchangeable products, and their reference products.

The Purple Book also contains information about all FDA-licensed allergenic, cellular and gene therapy, hematologic, and vaccine products regulated by the Center for Biologics Evaluation and Research (CBER).

Enter a product's proprietary (brand) name or the nonproprietary (proper) name to find related products and click on a product from the results below to see the product details.

★

- Humira (adalimumab)
- Hulio (adalimumab-fkjp)
- Abrilada (adalimumab-afzb)
- Hyrimoz (adalimumab-adaz)
- Hadlima (adalimumab-bwwd)
- Cyltezo (adalimumab-adbm)
- Amjevita (adalimumab-atto)

Product Label Information



Proprietary Name
Abrilada

Proper Name
adalimumab-afzb

Product Label   

Biosimilar(s) ⓘ

DOSAGE FORM
Injection

PRODUCT PRESENTATION
Autoinjector
Pre-Filled Syringe
Single-Dose Vial

STRENGTH
40MG/0.8ML
20MG/0.4ML
10MG/0.2ML

Proprietary Name
Abrilada

Proper Name
adalimumab-afzb

Product Label   

U.S. FOOD & DRUG ADMINISTRATION Purple Book Glossary Search FDA.gov

Purple Book Database of Licensed Biological Products

Simple Search Results for: *Abrilada* New Search Navigate to Advanced Search

To view a list and definitions of Product Presentation icons (e.g., , , ), click here. Hover over icons to view additional information.

Biosimilar(s) ⓘ Grayed out Product Label links indicate that there is no product label available for the product.

<p>Proprietary Name <i>Abrilada</i></p> <p>Proper Name <i>adalimumab-afzb</i></p> <p>Product Label   </p>	<p>Proprietary Name <i>Amjevita</i></p> <p>Proper Name <i>adalimumab-atto</i></p> <p>Product Label   </p>	<p>Proprietary Name <i>Cyltezo</i></p> <p>Proper Name <i>adalimumab-adbm</i></p> <p>Product Label  </p>	<p>Proprietary Name <i>Hadlima</i></p> <p>Proper Name <i>adalimumab-bwrd</i></p> <p>Product Label   </p>
<p>Proprietary Name <i>Hulio</i></p> <p>Proper Name <i>adalimumab-fkjp</i></p> <p>Product Label   </p>	<p>Proprietary Name <i>Hymizo</i></p> <p>Proper Name <i>adalimumab-adaz</i></p> <p>Product Label   </p>		

Interchangeable(s) ⓘ
No interchangeable data at this time.

Reference Product(s) ⓘ

<p>Proprietary Name <i>Humira</i></p> <p>Proper Name <i>adalimumab</i></p> <p>Product Label   </p>

Drugs@FDA: FDA-Approved Drugs

Home | Previous Page

Biologics License Application (BLA) 751113
Company: PFIZER INC.

Medication Guide

Products on BLA 751113

Drug Name	Active Ingredients	Strength	Dosage Form/Route	Marketing Status	TE Code	RLD	PA
ABRILADA	ADALIMUMAB-AFZB	40MG/0.8ML	MUSCULUS INJECTION	Prescription	None	No	No
ABRILADA	ADALIMUMAB-ATTO	20MG/0.4ML	MUSCULUS INJECTION	Prescription	None	No	No
ABRILADA	ADALIMUMAB-ADBM	10MG/0.2ML	MUSCULUS INJECTION	Prescription	None	No	No

Showing 1 to 3 of 3 entries

Approval Data(s) and History, Letters, Labels, Reviews for BLA 751113

Labels for BLA 751113

Action Date	Submission	Supplement Categories or Approval Type	Letters, Biologics, Labels, Patient Package Insert	Note
10/15/2013	026341	Approval	Label (FCI)	

Product Details Page



Purple Book Homepage / Product Details

Purple Book Database of Licensed Biological Products

[Purple Book Homepage](#)

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[FAQs](#)

[Download Purple Book Data](#)

Product Details for: *Abrilada*

[Return to Search Results](#)

Product Label

Grayed out Product Label links indicate that there is no product label available for the product.

Product Number	★ Dosage Form	★ Route of Administration	★ Strength	★ Product Presentation	Proprietary Name	Status
001	Injection	Subcutaneous	40MG/0.8ML	Autoinjector	Abrilada	Rx
002	Injection	Subcutaneous	40MG/0.8ML	Pre-Filled Syringe	Abrilada	Rx
003	Injection	Subcutaneous	20MG/0.4ML	Pre-Filled Syringe	Abrilada	Rx
004	Injection	Subcutaneous	10MG/0.2ML	Pre-Filled Syringe	Abrilada	Rx
005	Injection	Subcutaneous	40MG/0.8ML	Single-Dose Vial	Abrilada	Rx

Proper Name
adalimumab-afzb

Reference Product Proper Name
adalimumab

★ **Reference Product Proprietary Name**
Humira

BLA Number
761118

Applicant
Pfizer, Inc.

Approval Date
11/15/2019

Date of First Licensure

BLA Type ⓘ
351(k) Biosimilar

[Return to Search Results](#)

Advanced Search



Purple Book Database of Licensed Biological Products

Advanced Search

Enter data into the search box to search all products in the Purple Book. Click 'Additional Search Filters' to expand your search by entering additional terms or selecting from the drop-down list. The Advanced Search table below will update in real time and display all products that match any of the terms entered.

Search

RESET

Database last updated: December 03, 2020



+ Additional Search Filters



Show/Hide Columns

EXCEL

CSV

PDF

PRINT

Showing 1 to 5 of 5 results

Product Label	Applicant	Proprietary Name	Proper Name	BLA Type	Strength	Dosage Form	Route of Administration	Product Presentation	Status	Licensure	Approval Date	Ref. Product Proper Name	Ref. Product Proprietary Name	Supplement Number
	Janssen Biotech, Inc.	Remicade	infliximab	351(a)	100MG	For Injection	Intravenous	Single-Dose Vial	Rx	Licensed	08/24/1998	N/A	N/A	
	CELLTRION, Inc.	Inflectra	infliximab-dyyb	351(k) Biosimilar	100MG	For Injection	Intravenous	Single-Dose Vial	Rx	Licensed	04/05/2016	infliximab	Remicade	
	Samsung Bioepis Co., Ltd.	Renflexis	infliximab-abda	351(k) Biosimilar	100MG	For Injection	Intravenous	Single-Dose Vial	Rx	Licensed	04/21/2017	infliximab	Remicade	
	Pfizer Ireland Pharmaceuticals	Ixifi	infliximab-qbtx	351(k) Biosimilar	100MG	For Injection	Intravenous	Single-Dose Vial	Disc	Licensed	12/13/2017	infliximab	Remicade	
	Amgen, Inc.	Avsola	infliximab-axxq	351(k) Biosimilar	100MG	For Injection	Intravenous	Single-Dose Vial	Rx	Licensed	12/06/2019	infliximab	Remicade	

Show 30 entries

Previous Next

Glossary of Terms



The screenshot shows the FDA's Purple Book Glossary page. At the top, the FDA logo and 'U.S. FOOD & DRUG ADMINISTRATION' are on the left. On the right, there is a search bar for 'Search FDA.gov' and a 'Purple Book Glossary' button. Below the header, the main heading reads 'Purple Book Database of Licensed Biological Products'. The page contains introductory text about the database, a search input field with the placeholder 'Enter at least 3 letters', and a 'Download Purple Book Data' link. A dark blue overlay is positioned on the right side, titled 'Glossary', with a search bar containing 'Biosimilar' and a definition for 'Biosimilar'. The overlay also includes a 'BACK' button.

Glossary

Biosimilar

Example: "Biosimilar"

Biosimilar

A biosimilar product is a biological product that is highly similar to and has no clinically meaningful differences in terms of safety, purity, or potency (safety or effectiveness) from an existing FDA-licensed (approved) reference product.

[← BACK](#)

Education and Outreach

- FDA is committed to developing effective communications to improve understanding of biosimilars among patients, health care providers and payors
 - **Engaging** with health care professional and patient stakeholders
 - **Developing** educational materials for health care prescribers, pharmacists, and patients
- Education is an undertaking that requires **multi-stakeholder engagement**

FDA is committed to fulfilling their important role as one of many stakeholders

Health Care Provider Materials



FDA-approved biosimilars are safe and effective options for patients.



Explore FDA's new resources to learn more about biosimilars.



www.FDA.gov/Biosimilars



U.S. FOOD & DRUG
ADMINISTRATION

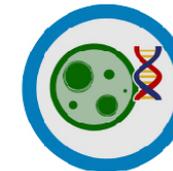
WHAT IS A BIOSIMILAR?

> A biosimilar is a biological product

FDA-approved biosimilars have been compared to an FDA-approved biologic, known as the reference product. Reference and biosimilar products are:



Generally large, complex molecules



Produced from living organisms



Carefully monitored to ensure consistent quality

BIOSIMILARS ARE SAFE, EFFECTIVE TREATMENT OPTIONS.

LEARN MORE.



U.S. FOOD & DRUG
ADMINISTRATION



Web Content and Infographic:

- Uses patient-friendly language and imagery
- Addresses topics, concerns, and misconceptions shown to be most important to patients
- Tested with patients treated with a biologic & patient advocacy organizations



Biosimilar Basics

Biosimilars are safe and effective biologic medications for treating many illnesses such as chronic skin and bowel diseases, arthritis, kidney conditions and cancer.

Biologic medications are generally made from **natural sources** and developed using advanced science.

Biosimilars are **FDA-approved** medications that are compared to another medication — the original biologic.

Biosimilar & Original Biologic:

- ✓ Same benefits
- ✓ Same amount and strength
- ✓ Same safety

Biosimilars are made with the same types of natural sources as the original biologic they were compared to — and **provide the same treatment benefits.**

Biosimilars may provide patients with **more access** to important treatments.

Plus, options:

- More competition in the health care market
- Lower costs

Biosimilars are approved by FDA after a **careful review** of data, studies, and tests.

FDA monitors the **safety** and **effectiveness** of all medications after their approval.

Check for medications with **careful reviews** of data, studies, and tests.

Check for medications with **careful reviews** of data, studies, and tests.

Check for medications with **careful reviews** of data, studies, and tests.

Visit www.FDA.gov/biosimilars and talk with your doctor to learn more.

FDA U.S. FOOD & DRUG ADMINISTRATION

FDA Biosimilar Materials in Spanish

Conceptos básicos de los Biosimilares para los pacientes



Artículos en español

Alimentos y Bebidas

Cosméticos

Dispositivos Médicos

Dispositivos que Emiten Radiación

Fraude en la Salud

Medicamentos

Nutrición

Productos de Tabaco

Productos Veterinarios

Salud de la Mujer

Salud Infantil

Vacunas, Sangre y Productos Biológicos

The screenshot shows the top of the FDA website page for 'Los biosimilares'. It features the FDA logo, the title 'Los biosimilares', and a row of icons representing various medical products: a vial, a syringe, a drip chamber, a video play button, another vial, another syringe, another drip chamber, and a pen. Below the icons is the FDA logo and the text 'U.S. FOOD & DRUG ADMINISTRATION'. There are also 'Watch later' and 'Share' buttons.

English

La Administración de Alimentos y Medicamentos de los EE.UU. (FDA, por sus siglas en inglés) ha aprobado medicamentos biosimilares para tratar enfermedades como el cáncer, la enfermedad de Crohn, la colitis, la artritis reumatoide, la psoriasis y otras.

Pero, ¿qué son los medicamentos biosimilares y biológicos intercambiables? Para

¿QUÉ ES UN BIOSIMILAR?

Un biosimilar es un producto biológico

Los biosimilares aprobados por la FDA han sido comparados con un producto biológico aprobado por la FDA, al que se le conoce como un producto de referencia. Los productos de referencia y los biosimilares son:



Moléculas grandes, generalmente complejas



Productos de organismos vivos



Cuidadosamente monitoreados para asegurar una calidad uniforme

Un biosimilar es muy similar a un producto de referencia

Para su aprobación, fueron comparadas las estructuras y las funciones de un biosimilar aprobado con un producto de referencia, examinando características clave tales como:



Pureza



Estructura molecular



Bioactividad

Los datos de estas comparaciones deben demostrar que el biosimilar es muy similar al producto de referencia.

Un biosimilar no tiene diferencias clínicamente significativas con un producto de referencia

Los estudios se realizaron para demostrar que los biosimilares no tienen diferencias clínicamente significativas en cuanto a seguridad, pureza o potencia (seguridad y eficacia) en comparación con el producto de referencia:



Estudios farmacocinéticos, y de ser necesarios, estudios farmacodinámicos



Evaluación de la inmunogenicidad



Estudios clínicos adicionales de ser necesarios

Los estudios se pueden realizar en forma independiente o combinada.

Un biosimilar es aprobado por la FDA después de una evaluación y pruebas exhaustivas por parte del solicitante

Los prescriptores y pacientes no deben tener inquietudes acerca del uso de estos medicamentos en lugar de los productos de referencia porque los biosimilares:



Cumplen con los rigurosos estándares de aprobación de la FDA



Se fabrican en instalaciones aprobadas por la FDA



Se les hacen seguimientos de vigilancia posterior a la comercialización para garantizar una seguridad continuada

Visite www.FDA.gov para conocer más acerca de los biosimilares.



Future Education and Outreach Plans



- Continue developing materials and resources for patients:
 - Videos
 - Additional infographics and graphics
 - Enhanced Social Media Strategy
- Create additional materials and resources for health care providers:
 - Fact Sheets and Videos
 - Educational curriculum/teaching resources for medical, nursing, and pharmacy schools
 - Updated Continuing Education Course
- Develop and revise materials as needed based on research/feedback

Resources

- Visit www.fda.gov/biosimilars for access to all the education materials and information about biosimilar and interchangeable products
- Visit the www.fda.gov/purplebook for information on biological products, including if products are biosimilar to a reference product
- Visit www.fda.gov/drugsatfda (**Drugs@FDA**) for information on all CDER approved drug products, including labeling and review information



References



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<https://www.fda.gov/advisory-committees/advisory-committee-calendar/meeting-oncologic-drugs-advisory-committee-10102018-10102018#event-materials>

Questions?



Thank You

www.fda.gov/biosimilars

