

# Case Study

## Level 2: Regulatory Scientific Concepts

### Introduction

Biological products (also called biologics) have been used as therapies in the United States for several decades. They represent a growing proportion of the health care market in the United States and treat a number of chronic illnesses like cancer, rheumatoid arthritis, and diabetes. In this case study, you will learn about interchangeable biosimilar products (also called interchangeable biosimilars). An interchangeable biosimilar is a type of biosimilar product (also called biosimilar) that meets additional requirements and may be substituted without intervention by the prescriber, subject to state pharmacy laws.

### Topics

- Naming of biologics and biosimilars
- Interchangeable biosimilars
- Pharmacy-level substitution and state laws
- Shared decision making and addressing patient questions

### As You Read...

What is the significance of the nonproprietary naming convention (product-identifying 4-letter suffix) for biologics?

What are the additional requirements for an interchangeable biosimilar, and what does approval as an interchangeable biosimilar mean regarding how it may be used?

How might the prescribing and dispensing process differ for a reference product, biosimilar, or an interchangeable biosimilar?

What is the Purple Book, and what information does it provide?

Where can patients get additional information on biosimilars?

### Interchangeable Biosimilars

#### A Pharmacist Considers Dispensing an Interchangeable Biosimilar to a Patient

Pharmacist Shah prepared to fill the prescription that Dr. Washington had prescribed for patient Juan's medication, *intrelumab-abhn*, and she noticed that the patient's insurance information had changed. Pharmacist Shah looked through the coverage information of the new insurance carrier. "They don't cover *intrelumab-abhn*. It's not on their formulary anymore, but it does look like they cover *intrelumab-jtnr*. It costs significantly less, too." Pharmacist Shah noted that the nonproprietary names for the reference product and this product shared a core name but contained a different 4-letter suffix (**Figure 1**). Pharmacist Shah concluded, "Well, maybe *intrelumab-jtnr* is a biosimilar since it shares the same core name, "*intrelumab*."

To get more information to discuss with Dr. Washington, Pharmacist Shah visited FDA's [Purple Book](#) and searched for *intrelumab-jtnr*.

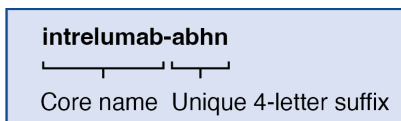


Figure 1: FDA's Naming Convention Includes a Shared Core Name Followed by a Unique, Product-Identifying 4-Letter Suffix

#### Interchangeable Biosimilars

As she typed "*intrelumab*" into the advanced search in the Purple Book, the screen populated with a list of biologics that share that core name. "Ah, this database also provides additional information on FDA-approved biologics, including approval dates, labeling information, dosage forms, and routes of administration. Finding *intrelumab-jtnr* in the list of products, Pharmacist Shah noted a column in the search results that indicated that *intrelumab-jtnr* was an interchangeable biosimilar. "How is an interchangeable biosimilar different from other biosimilars?"

Pharmacist Shah knew that biosimilars are approved through an abbreviated pathway

that differs from the pathway used to approve originator biologics. Pharmacist Shah searched [FDA's biosimilar website](#) as well as [Drugs@FDA](#), and noted that an interchangeable biosimilar is a biosimilar that meets additional requirements. She noted that these requirements include information to support a conclusion that the proposed interchangeable biosimilar can be expected to produce the same clinical result as the reference product in any given patient, and information to evaluate the impact of alternating between a reference product and a proposed interchangeable biosimilar and to demonstrate that there is no decrease in effectiveness or increase in safety risk associated with switching.

#### Pharmacy-Level Substitution and State Laws

Pharmacist Shah noted, "So, manufacturers of an interchangeable biosimilar have to have shown that their product is highly similar to and has no clinically meaningful differences from the reference product, just like any other biosimilar. But to be approved as an interchangeable biosimilar, the manufacturer also needed to provide data and information to FDA to demonstrate that the product meets additional requirements. Once approved as an interchangeable biosimilar, the product may be substituted without intervention by the prescriber, subject to state laws. Since Juan might not realize there's a coverage difference, I'm going to call and let him know. I think this additional information will be useful to him as well."

Pharmacist Shah checked the pharmacy to see if they had *intrelumab-jtnr* in stock. Since she hadn't worked with an interchangeable biosimilar before, she asked Pharmacist Cho, who had just entered the room, about filling prescriptions for interchangeable biosimilars. As a specialty pharmacist with a lot more experience with biologics, Pharmacist Cho confirmed that the interchangeable biosimilar could be substituted for the



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### Pharmacy-Level Substitution of Interchangeable Biosimilars

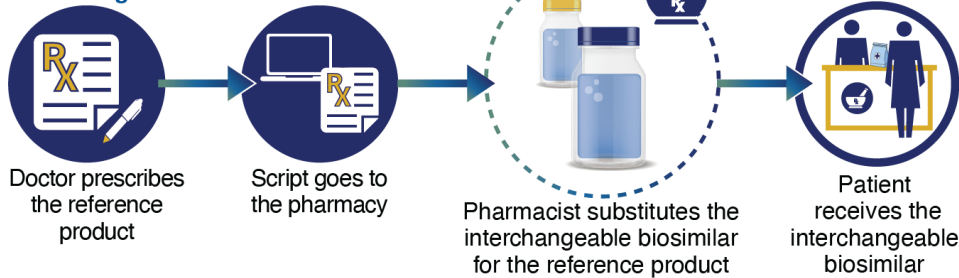


Figure 2: Interchangeable Biosimilars Are Biosimilars that Can Be Substituted Without Intervention from a Medical Prescriber, Subject to State Laws

reference product without the need for a new prescription from Dr. Washington in their state (Figure 2). Pharmacist Cho explained, “Our state legislature recently permitted pharmacy-level substitution for interchangeable biosimilars. I also work in a hospital pharmacy in a different state and the rules are slightly different. If in doubt, you can always contact your state board of pharmacy.”

### Shared Decision Making and Addressing Patient Questions

Pharmacist Shah called the patient to tell him about the change in his insurance coverage with the interchangeable medicine being on the plan’s formulary (Figure 3). Juan had some questions that Pharmacist Shah was able to answer:

- With regard to switching from a reference product to an interchangeable biosimilar, one would not expect the benefits or potential side effects to change.
- The interchangeable biosimilar is as safe and effective as the previously prescribed reference product.
- The interchangeable biosimilar is administered the same way (e.g., dosing and route of administration) as the reference product.
- The out-of-pocket cost for an interchangeable biosimilar may be less compared to the reference product (depending on the type of insurance and coverage).

Pharmacist Shah answered Juan’s questions and also recommended Juan to seek additional information from his insurer about costs if he still had questions. He also noted that FDA has a number of resources for patients. Reassured, Juan said, “Okay. Thank you for taking the time to talk to me about this. I’ll let you know if I have any other questions!”



Figure 3: Successful Biosimilar Uptake Involves Effective Communication Between the Patient, Health Care Providers, and Payors

## Biosimilar Resources

### FDA Pages

- [Biosimilar Materials](#)
- [Provider Materials](#)
- [Patient Materials](#)
- [Purple Book](#)
- [Drugs@FDA \(Drug Information\)](#)
- [Search Page for FDA Guidances](#)
- [Advisory Committee Materials for Biosimilars](#)
- [Biosimilar Approval Process Information](#)

### Additional Resources

#### Slide Decks

- Foundational Concepts
- Regulatory and Scientific Concepts

#### Case Study

- What Is a Biosimilar?
- Biosimilars in Patient Care
- Interchangeable Biosimilars
- Insulins/Interchangeable
- Comparative Analytical Assessment

#### Info Sheets

- Biological Products, Biosimilar Products, and Interchangeable Biosimilar Products
- Generics and Biosimilars
- Manufacturing and Variation
- Biosimilar Regulatory Approval Pathway
- Variation in Biological Products
- Comparative Clinical Studies
- Prescribing Biosimilar and Interchangeable Biosimilar Products
- Purple Book
- Comparative Analytical Assessment
- Quality Attributes
- Labeling/Package Insert
- Insulins/Interchangeable

#### Explanatory Videos

- Biosimilars: Manufacturing and Inherent Variation
- Biosimilars: Approval Process
- Biosimilars: Critical Quality Attributes
- Biosimilars: Interchangeability
- Purple Book
- Procedural Purple Book
- Totality of the Evidence
- Comparative Analytical Assessment

#### Discussion Questions

- Foundational Concepts
- Regulatory and Scientific Concepts
- Exercises (Provided in the Resource Guide for Teaching Faculty)