Kidney Cancer Association®
www.KidneyCancer.org

BIOSIMILARS

Frequently Asked Questions

Q: What Are Biologics?

A: Biologics or "biotech" drugs are state-of-the-art medicines, engineered from living organisms to treat cancer, arthritis, HIV/AIDS and other debilitating diseases. Examples of biologics include the kidney-cancer fighting drug *Avastin* and the arthritis drug *Enbrel*. Unlike more common small-molecule drugs that are made from chemicals, biologics exhibit high molecular complexity and are very sensitive to the manufacturing process.

Several notable targeted therapies to treat advanced kidney cancer, including angiogenesis inhibitors (used to cut off the blood supply that feeds tumor growth and development) and monoclonal antibodies (which bind to tumors to stop their growth) are biologic drugs.

Q: What are Biosimilars?

A: Biosimilars are sometimes *mistakenly* called "generic" versions of the original biologic drugs. However, unlike generics, which are virtually identical copies of traditional drugs, biosimilars are not the same as the original biologic medicine. This is an inevitable outcome because biologics are made of living cells – as opposed to the chemical composition of traditional drugs. As you can imagine when dealing with living organisms, even the slightest variation in the cell line or raw materials or even in the laboratory conditions can impact the way these medicines are created.

Q: Why Should Kidney Cancer Patients Care?

A: Biosimilars will affect the array of treatment options available for Kidney cancer patients. Biologics and biosimilars can never offer identical treatments. This is because biologics drugs are created from living organisms, which means no two drugs can share the same cell line or input material. Even small changes can have significant differences in its mode of action in patients. In order to make informed choices, patients should understand the complexity of these drugs and the difference between oral or injected generics versus biosimilars and talk with their doctors about the best course of treatment.

Q: Are there places around the world that have already established a so-called "biosimilars pathway?"

A: Yes. In 2004, the European Union authorized the first formal regulatory pathway for biosimilars. The Europeans Medicines Agency (EMA) is the regulatory body of the EU that has guided the implementation of the EU's biosimilar pathway. The EU's process overall was science-driven, transparent and sought the input of major stakeholders.

Other countries that have developed a pathway are:

- Japan, 2009
- Canada, 2010
- South Africa, 2010
- And the World Health Organization, 2009

Q: What are biosimilar "interchangeability" and "substitution"?

A: "Interchangeability" is the determination that a patient can be transferred safely from the innovator/reference product to a biosimilar and expect to have the same experience with no change in safety or efficacy. "Substitution" is the legal authority for a pharmacy filling a prescription or hospital to switch the innovator product to the biosimilar or switch the prescribed product to a different product.

Around the world, substitution decisions are largely handled at the local government level; in the US, the decision of whether a biosimilar is substitutable is made at the state level. In Canada, this decision is made at the provincial level, while within the European Union, the decision is made by individual Member States.

South Africa and Japan have similar guidelines for interchangeability and substitution - South Africa does not allow biosimilars to be interchangeable with their reference product and automatic substitution cannot apply to biosimilars. Japan's approach is similar, but additionally points out that substitution of a biosimilar with it reference or innovator product should be avoided throughout treatment.

The reality, however, is little is known about how the process of interchanging a biosimilar for the reference product and its potential impact on the patient's immune response.

Q: What is "pharmacovigilance"?

A: Pharmacovigilance is the surveillance of a drug's performance, particularly of adverse reactions experienced by patients taking the product after it has been released for marketing.

The overall goal of post-marketing pharmacovigilance plans is to accurately and promptly trace a patient's adverse event to a particular product, manufacturer and lot number. Proper labeling, product tracking and an operational system of reporting and attributing adverse events are all components of a well-functioning pharmacovigilance program.

Labeling remains a concern in the FDA's implementation of biosimilars moving forward, given the fact that no two biologics are identical. A biosimilar should contain the information needed by the doctor to help the patient make an informed decision. For example, the label should identify trials done with the biosimilar medicine, not the product it is copying.

Part and parcel to the pharmacovigilance process is how to identify the product through its unique name. Only the World Health Organization (WHO) and Japan have laid out clear guidelines that specifically address naming biosimilars:

- The WHO states that biosimilars should be identified with a unique brand name; that where an International Nonproprietary Name (INN) is defined it should be provided and that a lot number is essential for traceability.
- Japan, similarly, states that nonproprietary names should be followed by 'Follow-on 1' [or 2, 3, etc] and brand names should be followed by the letters 'bs' along with dosage form, dosage and company/manufacturer.
- The European Union, by contrast, does not have a formal guidance regarding naming, however, it does state "in order to support pharmacovigilance monitoring, the specific medicinal product given to the patient should be clearly identified."