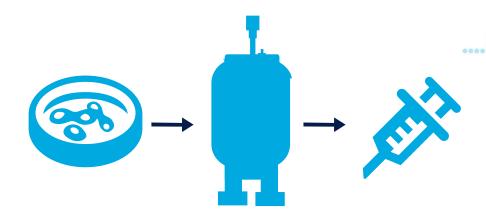
IN A WORLD WITH MULTIPLE BIOLOGICS AND BIOSIMILARS, KNOWLEDGE IS POWERFUL MEDICINE

abbyie

BIOLOGICS HAVE REVOLUTIONIZED THE TREATMENT OF MANY SERIOUS, CHRONIC AND LIFE-THREATENING DISEASES



Biologics are complex medicines made from living organisms or cells. Examples include vaccines, insulin, hormones and monoclonal antibodies1

rritaria XIOO MILLION

More than 350 MILLION PEOPLE Worldwide have been treated with biologics

for conditions such as diabetes, rheumatoid arthritis, Crohn's disease and certain cancers1

BIOLOGICS ARE COMPLEX MEDICINES¹

COMPLEXITY BY THE NUMBERS:

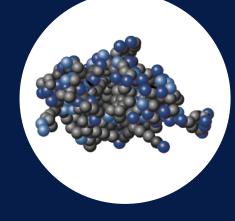
ASPIRIN (CHEMICAL MEDICINE):



21 ATOMS

(LESS COMPLEX BIOLOGIC):

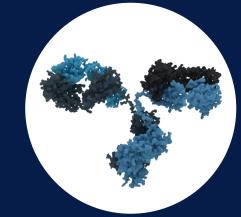
INSULIN



788 ATOMS

(MORE COMPLEX BIOLOGIC):

MONOCLONAL ANTIBODY



MORE THAN 20,000 ATOMS

Biologics are made by living organisms and are highly sensitive to manufacturing conditions

The process for manufacturing a biologic is extremely complex—requiring up to







for a conventional medicine1

THE COMPLEX WORLD WITH MULTIPLE BIOSIMILARS



biologic medications, including biosimilars, non-comparables and biobetters are in clinical development²

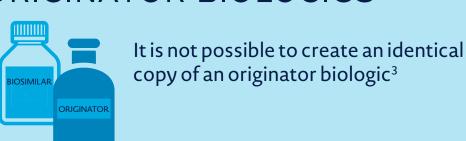


More than



GENERIC VERSIONS OF **ORIGINATOR BIOLOGICS**

BIOSIMILARS ARE NOT



Biosimilars made by different manufacturers will differ from the

originator medicine and

from each other

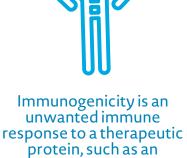
difference in the complex structure and function4

The smallest change to the starting materials and

manufacturing processes can make a significant

SAFETY AND EFFICACY OF BIOSIMILARS

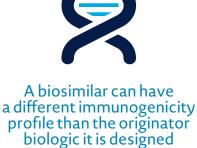
IMMUNOGENICITY IS KEY TO DETERMINING THE



originator biologic or biosimilar⁶



neutralizing factors which are made inside the body⁷ *Extrapolation of immunogenicity data is only possible from high-risk to low-risk patient populations and in clinical settings9



to mimic⁸



patient-population most sensitive to slight changes in the immunogenicity profile⁵

SWITCHING FROM AN ORIGINATOR BIOLOGIC TO

A BIOSIMILAR IS A CHANGE IN MEDICATION

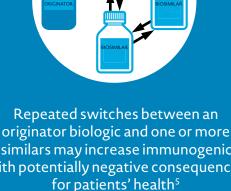
NOT



response in a study of patients with Crohn's disease and other inflammatory autoimmune conditions^{10,11,12} REFERENCES



No long-term data on switching patients between an originator biologic and a biosimilar for reasons unrelated to clinical outcomes are available 13,14



biosimilars may increase immunogenicity, with potentially negative consequences



a biosimilar^{15,16}

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