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INNOVATION IN
GENE THERAPY

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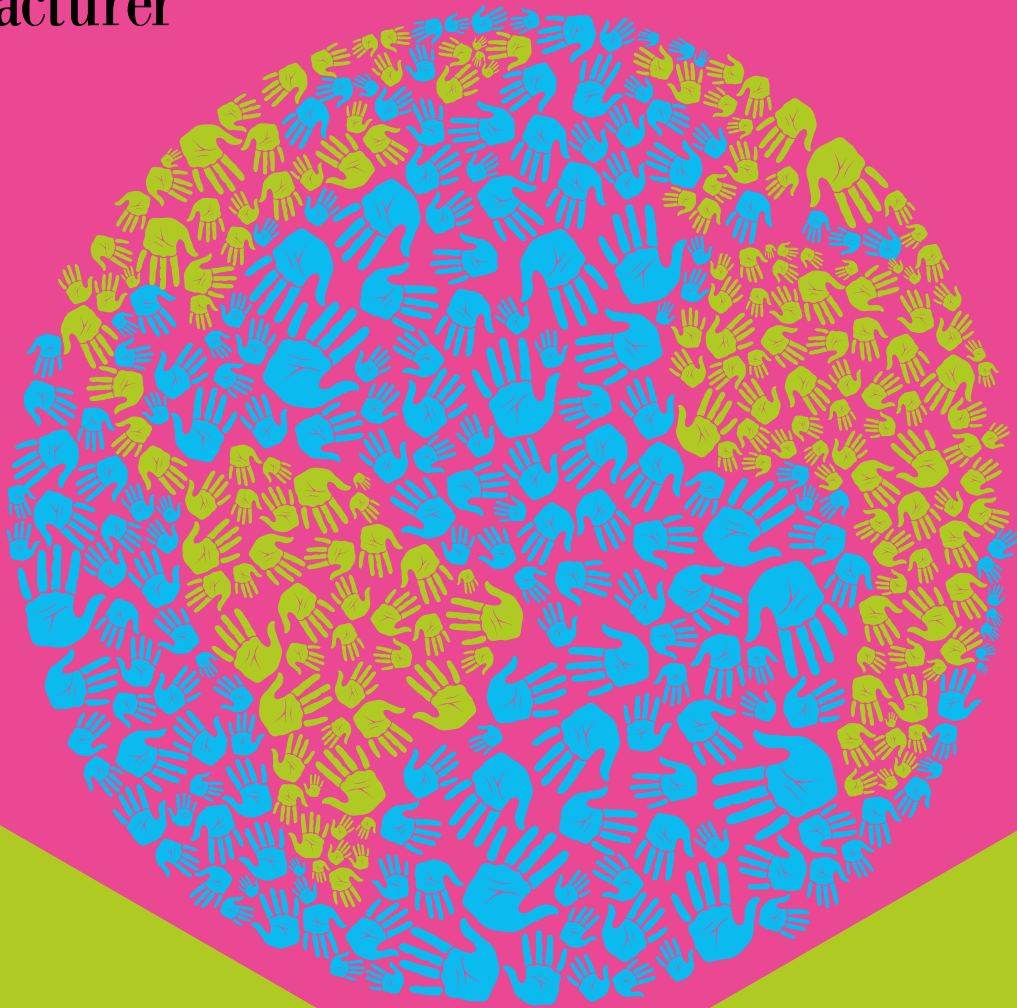
OUR LATEST
DRUG DELIVERY SUPPLEMENT

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HOW SMART PACKAGING IS
FIGHTING COUNTERFEIT DRUGS

european
PHARMACEUTICAL
manufacturer

June 2019



SMASHing it!

How Merck's new approach to packaging
is improving sustainability in pharma

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Who:
Technoflex

What:
A new technology for reconstituting unstable drugs in a simpler way

How:
An innovative approach to packaging


MIXING THINGS UP

Getting drugs with unstable characteristics to the patient is a complicated process. One company believes it may have the solution, as Sylvie Ponlot from Technoflex explains.

Case study

Drugs which are unstable in solution have, until today, been packaged in powder or lyophilisate form in glass bottles. They then need to be reconstituted at the patient's bedside, or in the hospital pharmacy, in aseptic conditions. There are many errors and accidents linked to reconstitutions which pose a real risk for patients and healthcare personnel: errors with diluents, dosage errors, needle stick injuries¹, contamination, etc. To reduce these risks, Technoflex has developed Dual-Mix, an innovative primary packaging which meets three challenges: storing the drug to be reconstituted, making its reconstitution secure and ensuring the safety of healthcare staff and the patient.

Dual-Mix is a patented bag which contains a medicine in powder/lyophilisate form and the associated diluent in the same dual-chamber primary packaging. It facilitates and makes safe the packaging of very unstable molecules which need to be reconstituted just before administration to the patient. Designed in Inerta polypropylene, the material in contact with the main active ingredient and the diluent is fully compliant with European and American pharmacopoeias.



The bag is delivered sterile and consists of a lower chamber for the diluent and an upper chamber for the main active ingredient. The latter is the component which requires the highest protection. So, a peelable aluminium label, which can be placed on both sides of the bag, protects the powder or the lyophilisate from light and humidity. It is easy to remove at the time of use, and the nurse can very simply check the integrity of the product before its reconstitution.

The two chambers are separated by a peelable seal. It is sufficiently hard wearing not to break spontaneously during transport or storage, but is however easy to break by using simple appropriate pressure on the lower chamber to ensure that the main active ingredient and its diluent are mixed just before infusion. Reconstitution is achieved in under 10 seconds and in a totally safe way. The bag's closed system ensures that the product is sterile and avoids risks of contamination during handling. Finally, Dual-Mix has a twist-off compatible with the majority of spikes and infusion sets used in Europe and the United States.

Dual-Mix is available in three different volumes of 50, 100 and 250ml and opens the way for standardised ready-to-use doses of drugs. By avoiding the need in some cases for preparation in the hospital pharmacy, Dual-Mix optimises preparation and administration by medical staff. A not inconsiderable advantage and a great advance, making reconstitution and administration simple, fast and totally safe in a hospital environment, but also during hospitalisation at home or in emergency or conflict zones.

REFERENCE:

1. In the United States, 1000 people, 58% of whom are nurses, are affected every day by needle stick injuries, generating \$1 billion in extra costs. (Source: Becker Hospital Review)

