




West's SmartDose[®] Drug Delivery Platform: a Wearable Engineered with Both Patient & Pharma Partner in Mind

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West: An Integral Part of the Healthcare Industry



Top 35
Injectable biologics
rely on West and
Daikyo components



Top 75
Supplier to the top 75
pharmaceutical & biotech
injectable companies



~ 40 Billion
Components
manufactured
annually



West Self-Injection Portfolio

SELFDOSE[®]
Patient Controlled Delivery



SMARTDOSE[®]
Electronic Wearable Injector



SMARTDOSE[®]
GEN I - 3.5mL



SMARTDOSE[®]
GEN II 3.5 & 10mL



SMARTDOSE[®]
GEN III - 3.5mL



SMARTDOSE[®]
GEN II 3.5 & 10mL

1mL

3.5mL

10mL

User Loaded Wearable On-Body Injectors

SmartDose[®] Drug Delivery Platform

Gen I

Status: Commercial





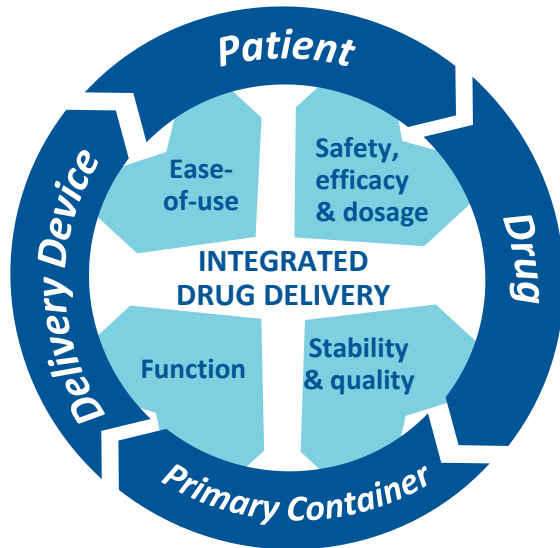
SmartDose® Gen I

- Fully integrated delivery system
 - Elastomer – Container – Device
- Electromechanical drive
 - Delivery volume up to 3.7mL
- Pre-Programmable injection time
- Daikyo Crystal Zenith® COP primary container and Flurotec® laminated elastomers
- Connectivity capable
- First combination product that uses SmartDose® drug delivery platform was FDA approved in 2016
- Commercially available





SmartDose: Example of integrated delivery system



Patient-centric integrated delivery system

Electronic, Large volume
Minimal steps

Containment system optimized for biologics

Daikyo Crystal Zenith®
FluroTec® Barrier Film
Standard filling

Risk mitigation and established supply

Commercial process
Adding capacity
Multiple locations

User Loaded Wearable On-Body Injectors

SmartDose[®] Drug Delivery Platform

Gen II

Status: In Development



- Leveraged the user-experience gained from SmartDose Gen I
- Introduced technical and usability improvements
- Flexibility for any single delivery dose without hardware adaption
- Fast delivery rate:
 - 3.5mL platform: 1.5mL/min for viscosities $\leq 15\text{cP}$
 - 10mL platform: 1mL/min for viscosities $\leq 15\text{cP}$
- Container material: Glass and Daikyo Crystal Zenith
- Bluetooth connectivity



Max dose: 3.5mL



Max dose: 10mL

Preloaded Wearable On-Body Injectors

SmartDose[®] Drug Delivery Platform

Gen III

Status: In Development



Daikyo Crystal Zenith[®] Insert Needle with Angled Hub

- Combines Crystal Zenith[®] COP moldability and West Insert Needle technology
- Fluid path simple as a Prefilled Syringe (PFS)
- Only known, qualified materials in contact with drug
- Container available nested for standard Fill-Finish
- Filling process vetted with equipment vendors and CMOs

Preloaded device eliminates user loading of primary container and increases patient convenience



Steps For Pharma:

- Fill Container and Place Piston
- Assemble Telescopic Screw Assembly (TSA) to filled container
- Place cartridge into non-sterile device (no need for device sterilization)
- Snap device cover on
- Attach pull ring to Rigid Needle Shield
- Package into final packaging

Device assembly does not require cleanroom environment or final sterilization





Preloaded: Simplified Steps for Use: Peel – Stick – Activate

Steps For Patients:

1. Adhesive and Needle Shield are pulled simultaneously by pulling the yellow ring
2. Device is adhered to injection site
 - Activation button is locked out until the device is placed on the skin
3. Activation button is pressed to start delivery
 - After delivery is complete, device is peeled from the skin
 - Needle retraction is automatic on device removal





Do you want to hear more about SmartDose®?
Come and visit West Booth X67

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*West seeks partners for it's SmartDose drug delivery system. This drug delivery system is intended to be used as an integrated system with drug filling and assembly completed by the pharmaceutical/Biotech company. In the US, the SmartDose drug delivery System is considered an on-body infusor
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