

# Preparing eye drops from injectable specialities: using a peristaltic pump, from reconstituion to distribution

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#### Introduction

In our hospital, **1,100 anti-infectious eye drops** are prepared each year as hospital preparations **from injectable commercial specialties** (ceftazidime, amphotericin B, etc.).

Their preparation is not automated, and involves many manual and repetitive steps.

#### **Objective**

Validate the use of the Repeater® peristaltic pump (Baxter) to automate all stages of eye drop preparation: from reconstitution to distribution.

#### Matarials and methods

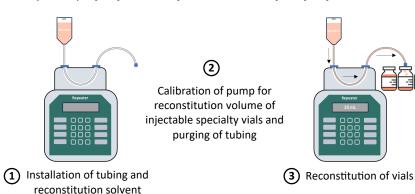
**Pump qualification:** gravimetric measurements of volumes of 5 and 10 mL of water delivered by the pump (10 repetitions for each). Verification of two parameters:

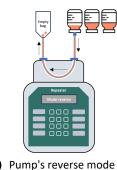
- → Accuracy: deviations from true values within ±2%
- → Precision: coefficients of variation < 5%

**Production of a test batch** of 30 eye drops of amphotericin B at 5g/L, verification of three parameters:

- → Mass uniformity of eye drop vials
- → Amphotericin B concentration (by HPLC)
- → Sterility (inoculation on agar plates)

#### Eye drops preparation procedure: aseptic preparation in a class A isolator





removes vials contents in

Pump calibration for dispatch volume and tubing purging



6 Dispensing the stock solution into eye-drops bottles through a 0.22 μm sterilizing filter

#### **Results**

**Pump qualification** (5 and 10 mL delivered):

ightarrow Accuracy  $lap{f V}$ 

Deviations from true values: -0,2% et -0,6%

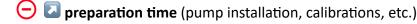
 $\rightarrow$  Precision  $\checkmark$ 

Coefficients of variation: 0,26% et 0,14%

## **Production of the test batch** (30 eye drops of amphotericin B):

- → Validation of the operating procedure ✓
- → Mass uniformity
- → Sterility ✓
- → Amphotericin B concentration: 4,91 g/L (± 0,05) ✓

### <u>Conclusion</u>



Elimination of manual steps, automation of preparation:

- → Improving the quality of life at work for PPH
  - → batches size → preparations frequency

Procedure validated for 3 types of eye drops (amphotericin B, vancomycin and ceftazidime)→ 15 batches released in the last 6 months