

INTRODUCTION

Semi-solid extrusion (SSE) 3D printing: personalized dosage forms (**size, strength, release**).

The **dexamethasone–ondansetron combination**, used in **pediatric chemotherapy prophylaxis**, may benefit from **orodispersible forms**.

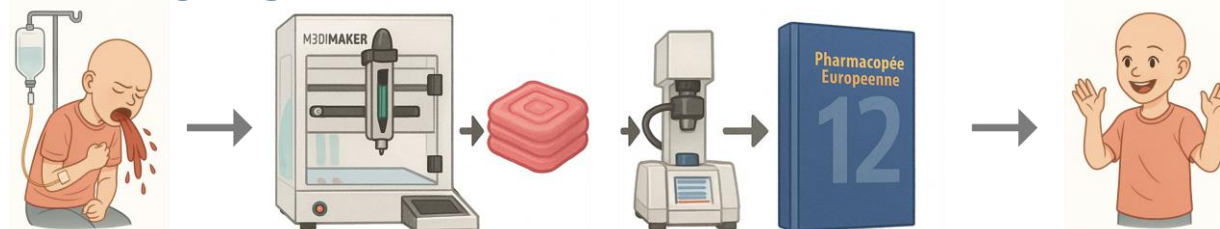
The **rheological profile of the hydrogel** is the key to **printing success**.

Bodin. R; Ramos.S; Vignes.M; Boucida.M; Do.B; Annereau.M; Denis.L
Villejuif – Gustave Roussy - France

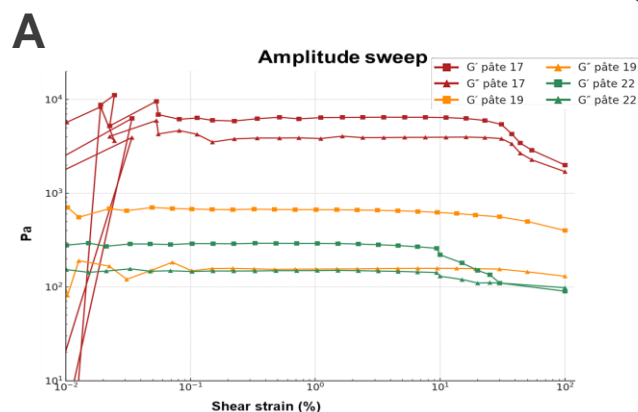
OBJECTIVE

Identify among **3 pastes** (P17, P19, P22) an **optimal rheological profile**, ensuring orodispersible dosage forms compliant with the **European Pharmacopoeia**.

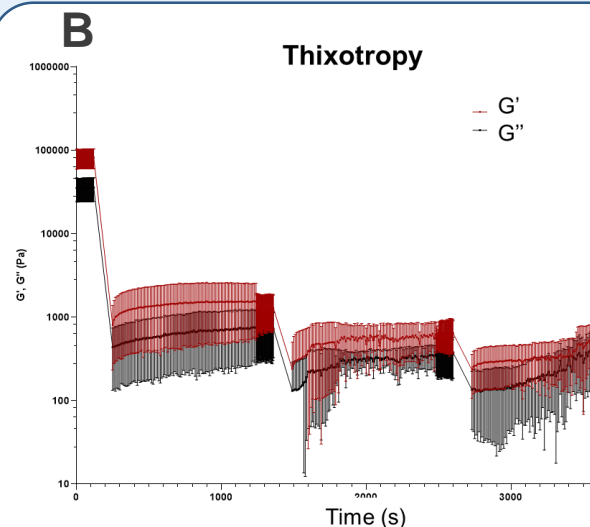
METHODS



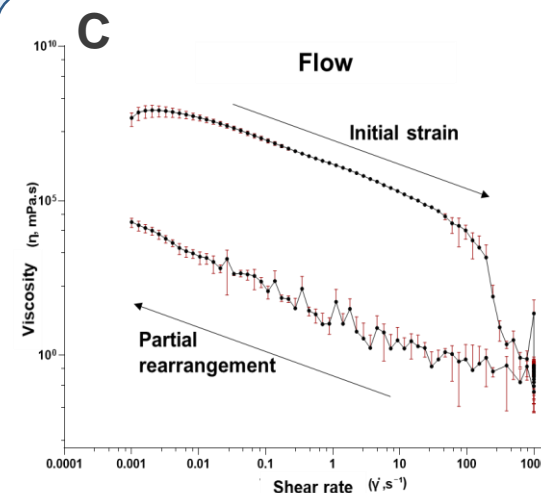
RESULTS



A: Amplitude sweep :
P17 (alginate, high glycerol) : $G' > 1000 \text{ Pa}$ → rigid, irregular poor extrusion
P19 (water-enriched) : $G' \approx 500 \text{ Pa}$, $G'' \approx 200 \text{ Pa}$ → homogeneous extrusion.
P22 (reduced water/glycerol) : $\tan \delta \approx 1$ → Optimal balance

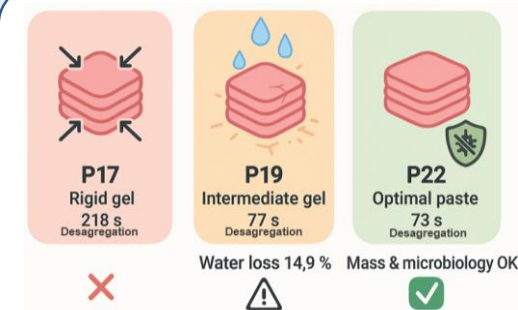


B: P22 Thixotropy: Partial but rapid viscosity recovery after shear stress, preventing collapse and ensuring 3D stability.



C: P22 Flow curves: Shear-thinning profiles, essential for printability, extrusion fidelity, structural integrity

CONCLUSION



- ✓ P22 showed the optimal rheological profile
 - ✓ Ensured Ph. Eur. compliance
- Further evaluations (DSC, XRPD, ...) are ongoing