M FACULTY OF J PHARMACEUTICAL SCIENCES

LABORATORY OF PHARMACEUTICAL TECHNOLOGY

INFLUENCE OF BINDER ATTRIBUTES ON BINDER EFFECTIVENESS IN A

CONTINUOUS TWIN SCREW WET GRANULATION PROCESS

VIA WET AND DRY BINDER ADDITION

L. Vandevivere¹, C. Portier¹, V. Vanhoorne¹, O. Häusler², T. De Beer³ and C. Vervaet¹

¹Laboratory of Pharmaceutical Technology, Ghent University, Ottergemsesteenweg 460, 9000 Ghent, Belgium

² Roquette Frères, Rue de la Haute Loge, 62136 Lestrem, France

³ Laboratory of Pharmaceutical Process Analytical Technology, Ghent University, Ottergemsesteenweg 460, 9000 Ghent, Belgium

1. Introduction

- As a switch to **continuous twin screw granulation** is quickly gaining momentum, the suitability of binders needs to be evaluated towards this novel granulation process.
- Binder suitability depends on **binder effectiveness**, which is affected by **binde** attributes. These critical attributes need to be identified to allow a systematic binde

	4. Results				
е	Dry addition method				
er	• HPMC E15				
er	■ HPIVIC E5 80- ■ PVP K90 ■ PVP K30				

selection.

2. Objectives

- Examining the correlation between binder effectiveness and binder attributes, facilitating formulation design for twin screw granulation (TSG).
- Evaluating the **effect** of different **binder types** on **granule properties**.

3. Materials & Methods

ConsiGma[™]-25 system (GEA Pharma Systems)

Formulation

<u>Poorly soluble filler:</u> anhydrous dicalcium phosphate (DCP) <u>Binders:</u> maltodextrin 2/6/DSH, starch octenyl succinate, hydroxypropyl (HP) pea starch, PVP K12/K30/K90, HPMC E5/E15, and PVA 4-88

Addition method and binder concentration

Addition method		Binder concentration (based on dry mass)
Wet	As an aqueous dispersion	1.44, 3 and 5%
Dry	As dry powder in a preblend with DCP	5%



-Dv_90

Dv 10

(i) PVA 4-88 – starch octenyl succinate (ii) PVP K90 – HPMC E5/E15



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