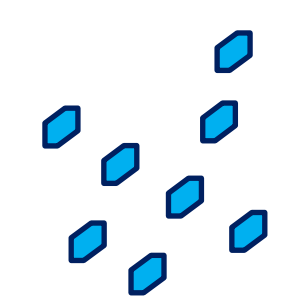
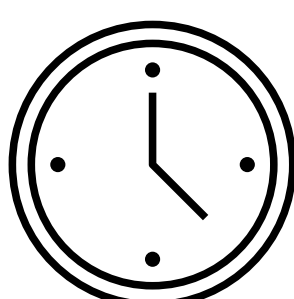


# Facilitating material-sparing dry granulation technical transfer through RoCo simulation of spray dried intermediate based formulations

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## Problem Statement

- Dry granulation (DG) demonstration batches consume large amounts of material and time
- Spray dried intermediate (SDI) based tablets commonly require upstream dry granulation
- Previous workflows removed reliance on rotary tablet demonstration batches via the STYL'One Evolution<sup>1</sup>
- DG is still required to
  - Determine settings for target attributes
  - Evaluate acceptable process ranges



## Can the STYL'One eliminate at-scale demo batches?

1

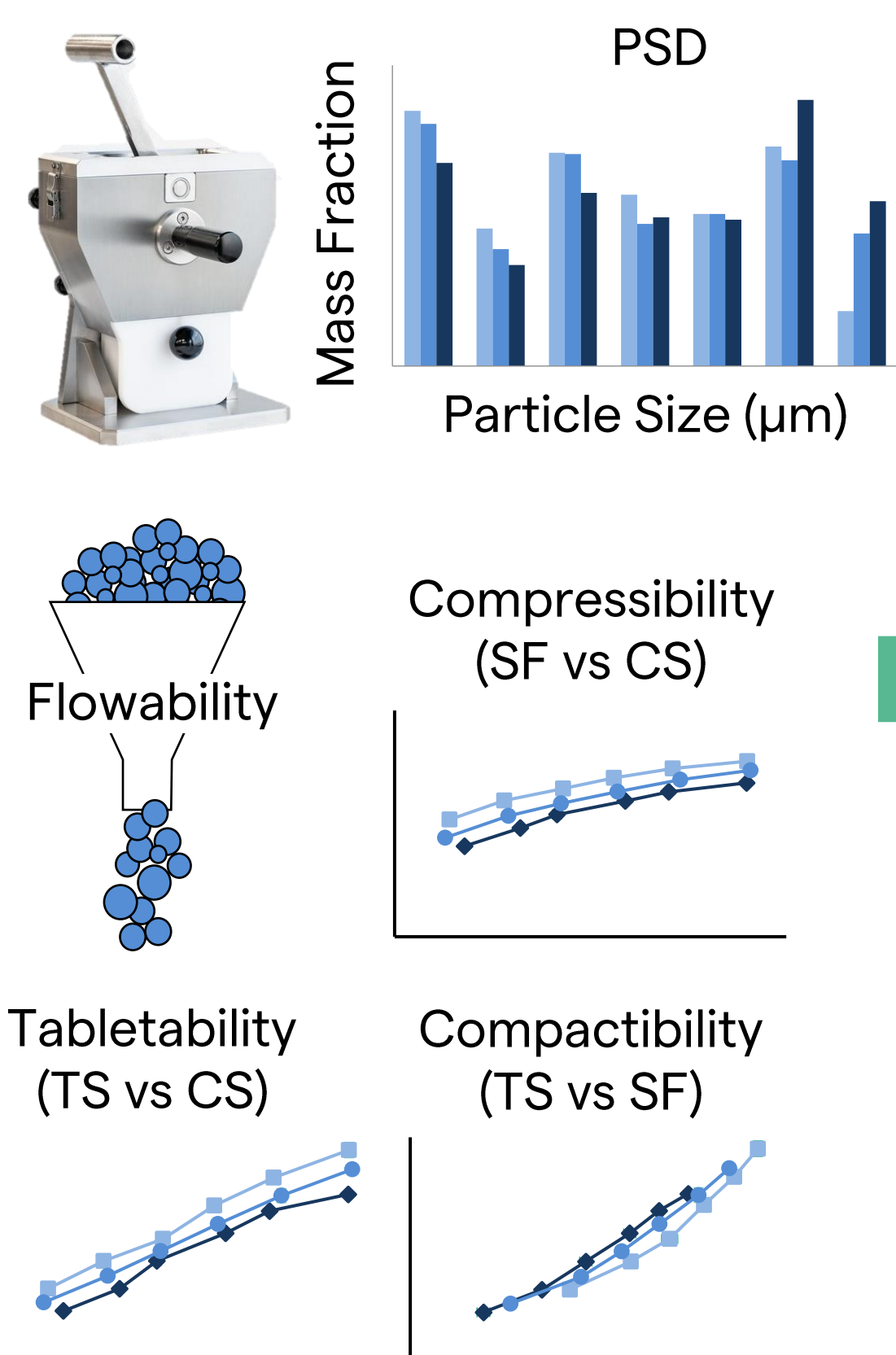
Compacts manufactured at target solid fraction and specific compaction forces of at least  $\pm 1\text{ kN/cm}$

2

Compacts hand milled and characterized for particle size, flowability, and compression characteristics

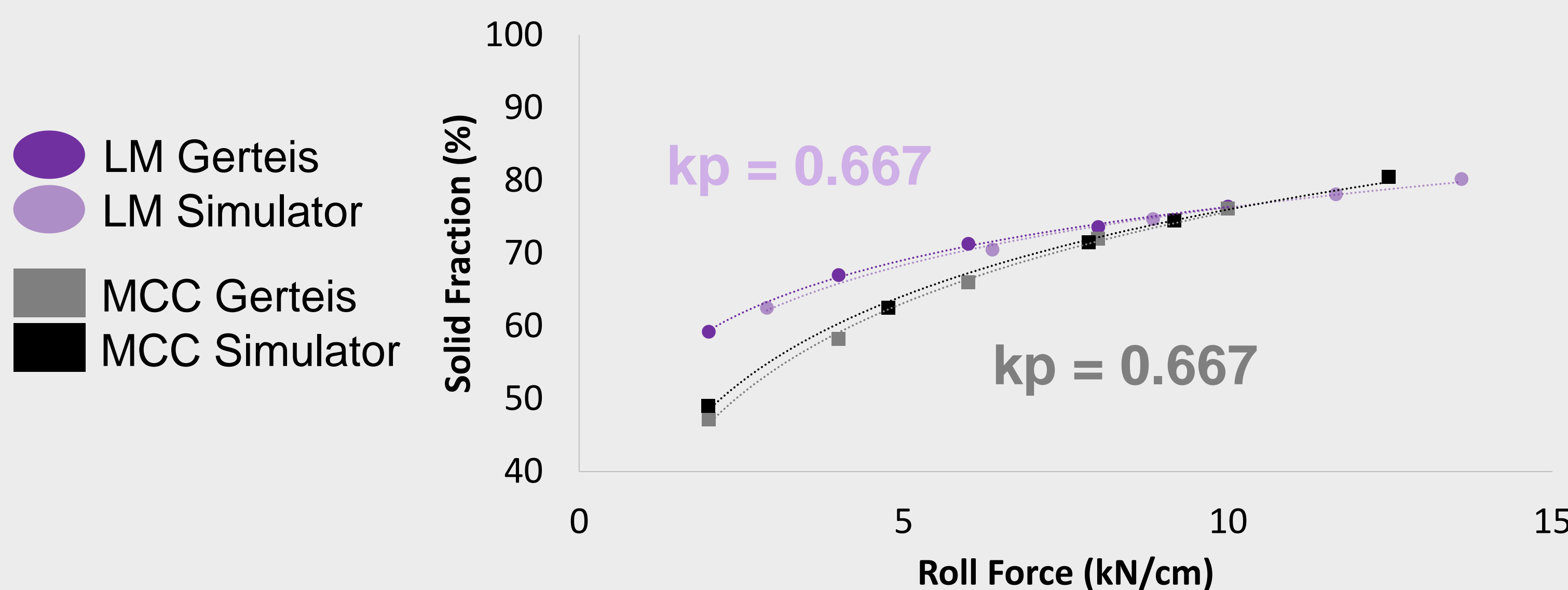
3

Target and acceptable range specific compaction forces set, and ribbons manufactured at-scale on target within range



## Methods & Results:

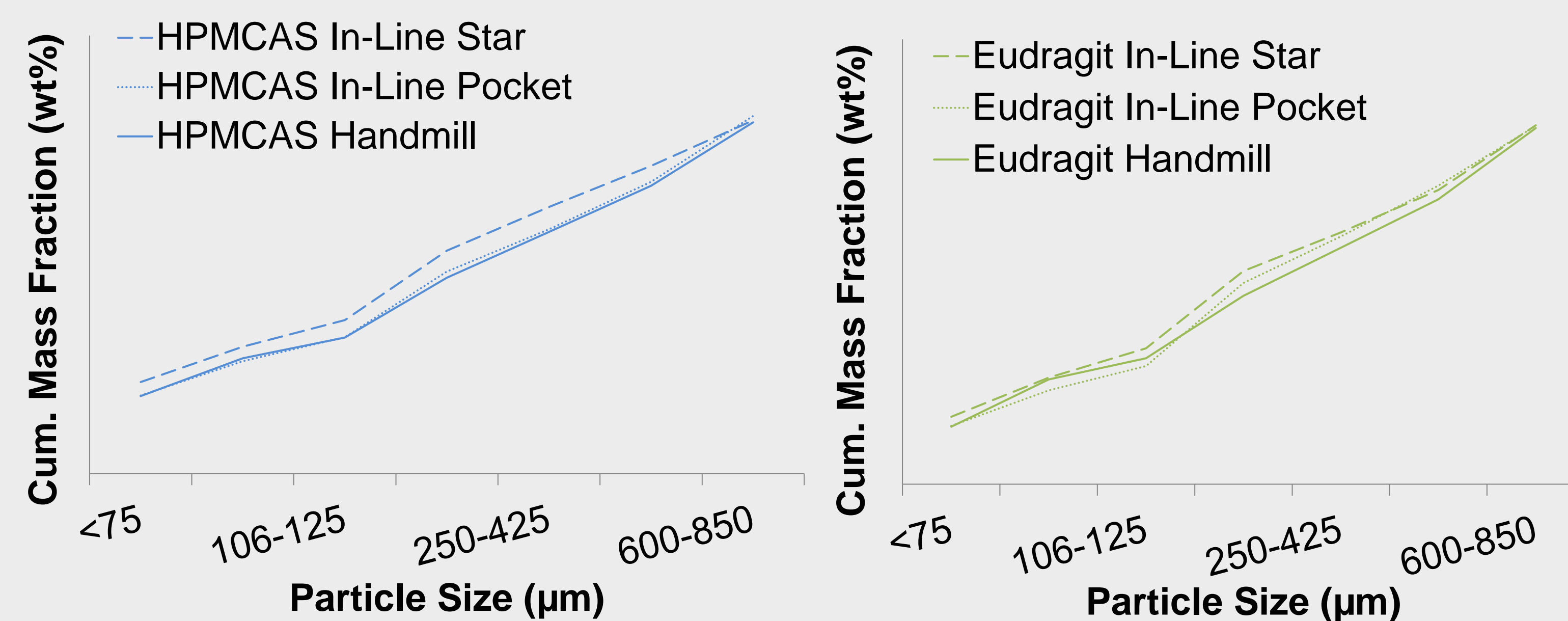
### Gerteis Minipactor kp factor evaluation



kp of 0.667 confirmed and applied to 5 representative blends with an average error of 1.7% solid fraction prediction from RoCo simulation to Gerteis Minipactor

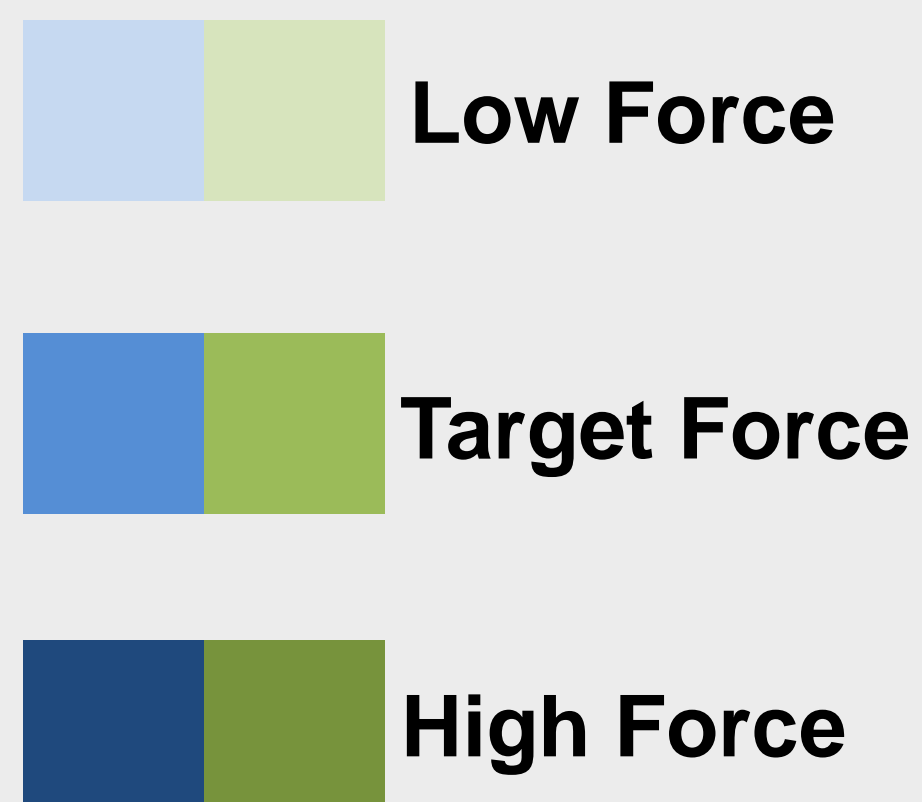
### Gerteis handmill evaluation

Trends between at-scale pocket or star rotor versus handmill reflect similar PSD

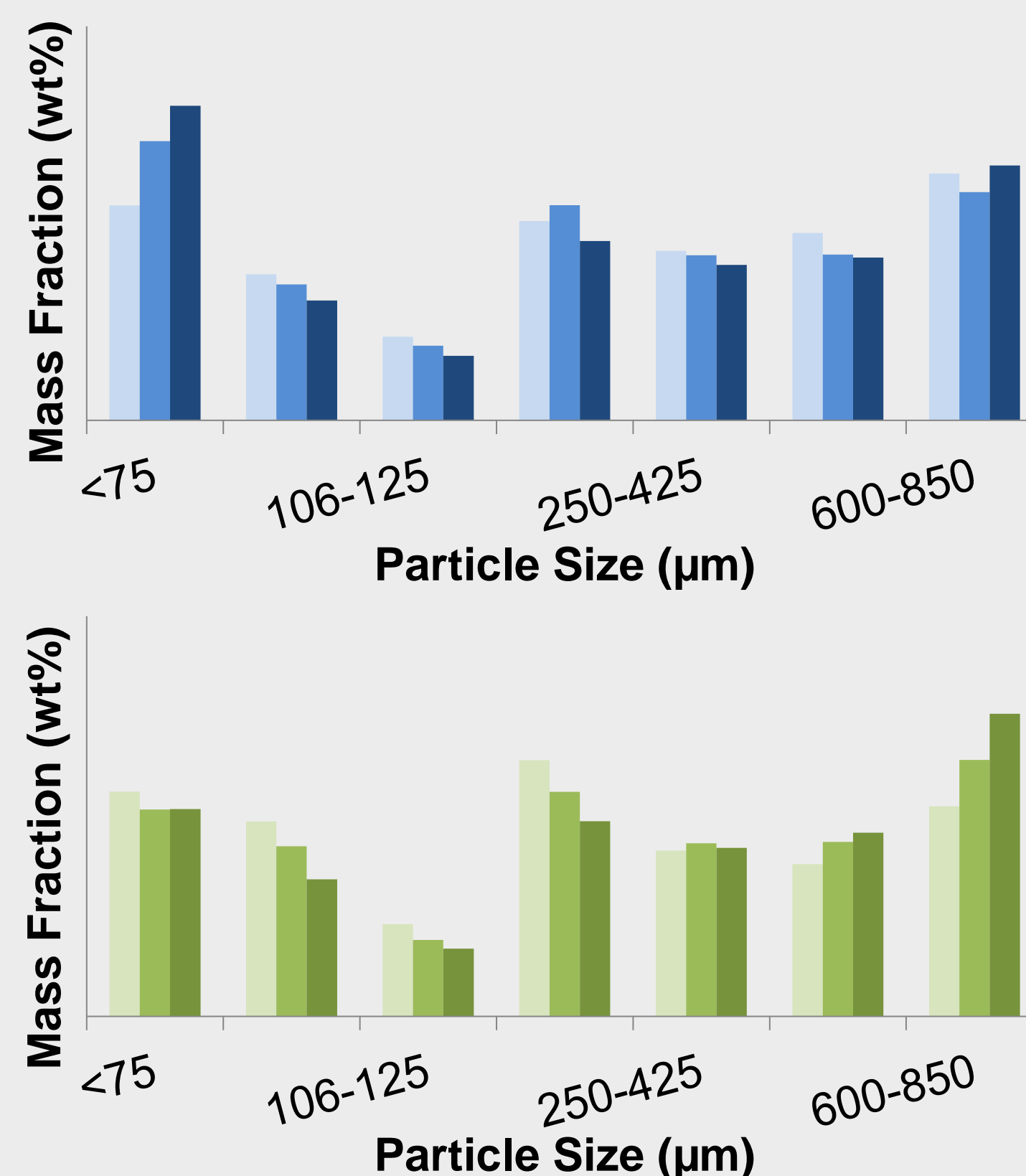


## 1/2 Putting it to the test!

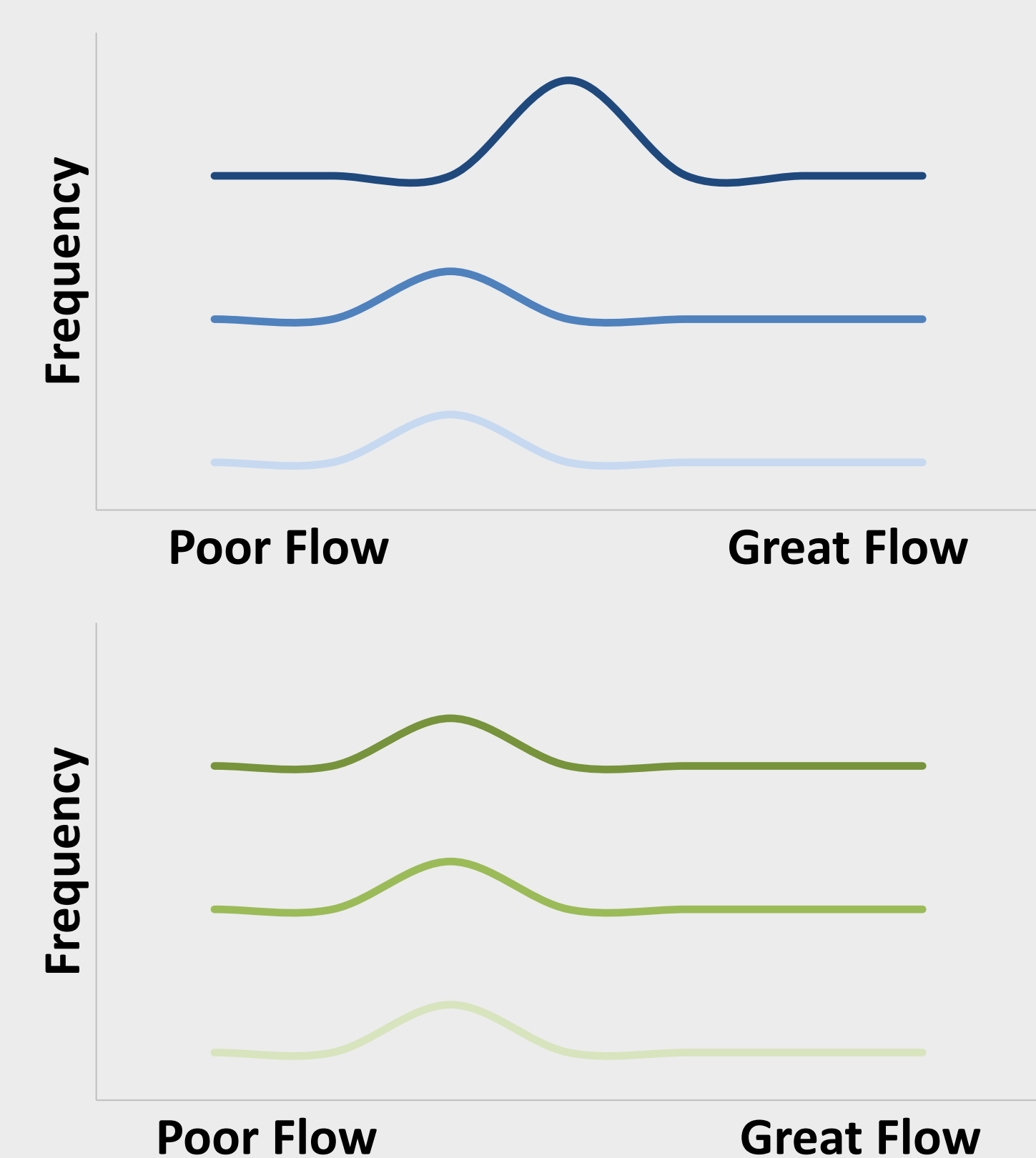
Bench-scale manufacture of spray dried HPMCAS and Eudragit blends



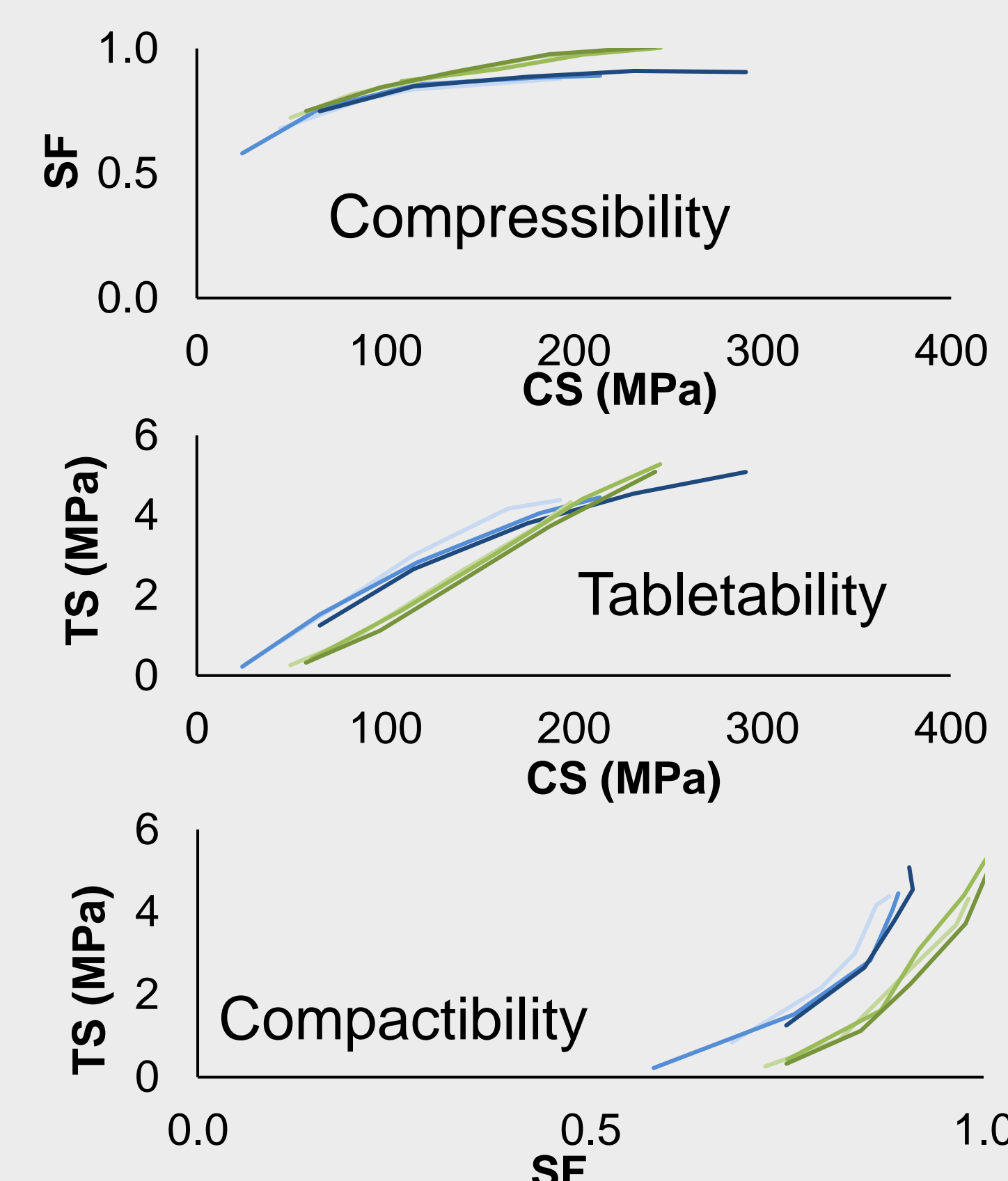
### Processing Range PSD



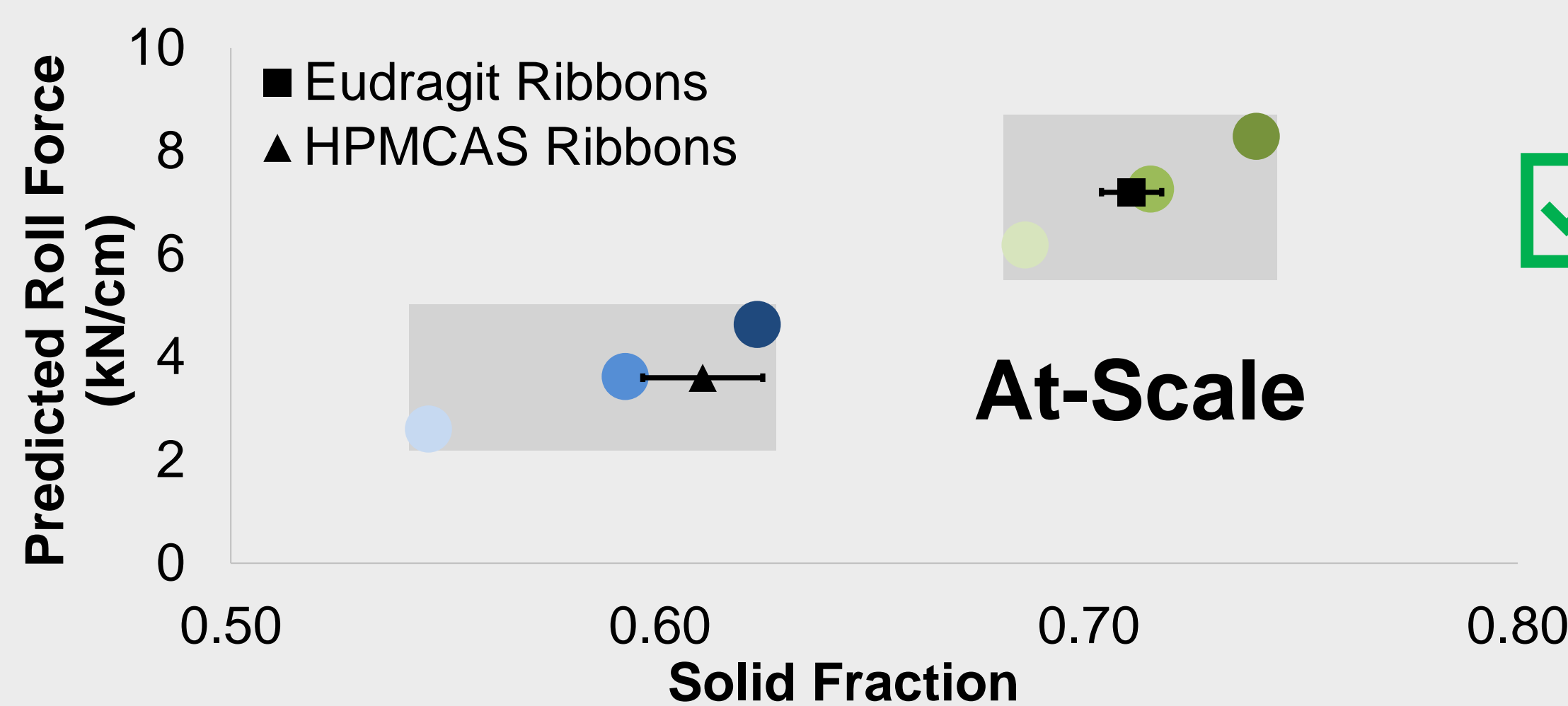
### Final Blend Flowability



### Final Blend CTC



## 3 RoCo Force Prediction



## Conclusions, Recommendations, & Next Steps

- Simulation of DG generates acceptable targets and ranges for at-scale DG of SDI-based formulations
- Additional testing should be performed to evaluate downstream performance
- This method will be applied to clinical programs based on risk to accelerate timelines, saving material and cost

1. (Webinar) From Technology Selection to Final Drug Product: Material Sparing Approaches for ASD Development. Allison DuRoss and Amanda Pluntze.