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► **To cite this version:**

Marie-Hélène Famelart, Islem Mtibaa, Florence Rousseau, M Perrignon, R Richoux, et al.. Drainage of acid-rennet gels from preheated milk. IDF Cheese Science & Technology Symposium, Jun 2024, Bergen, Norway. , 2024. hal-04608094

**HAL Id: hal-04608094**

**<https://hal.inrae.fr/hal-04608094v1>**

Submitted on 11 Jun 2024

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# Drainage of acid-rennet gels from preheated milk

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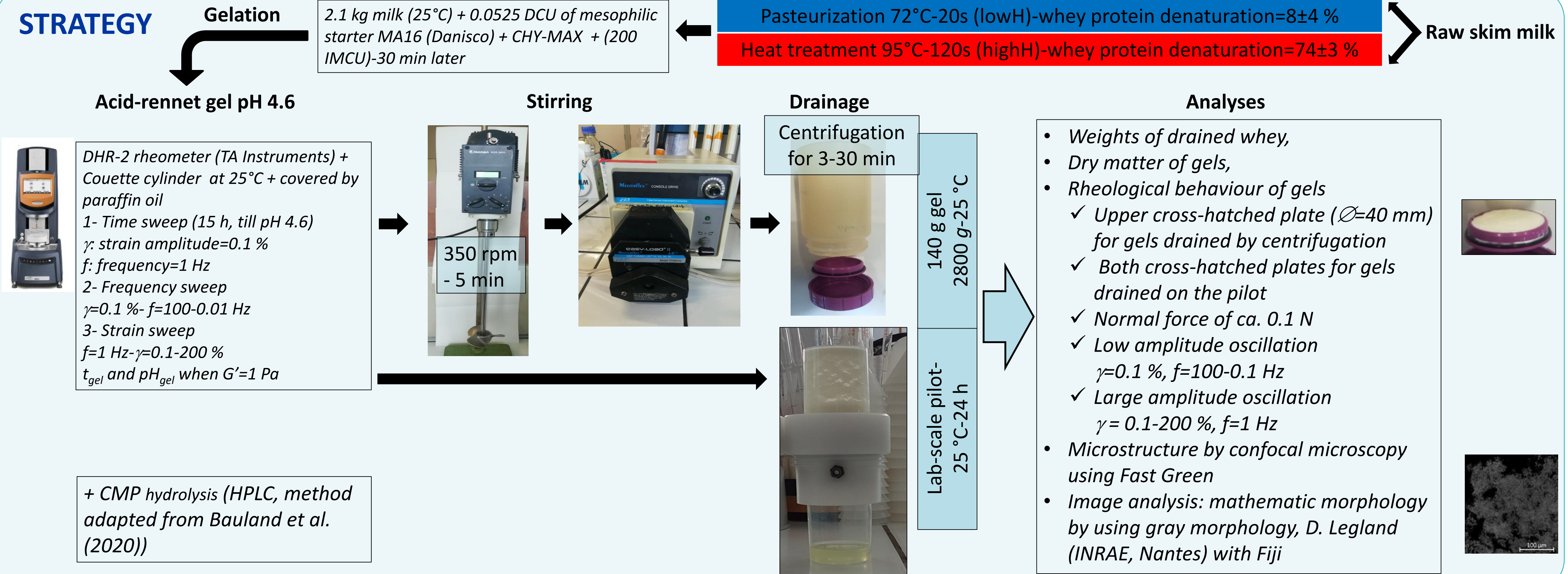
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## CONTEXT & AIM

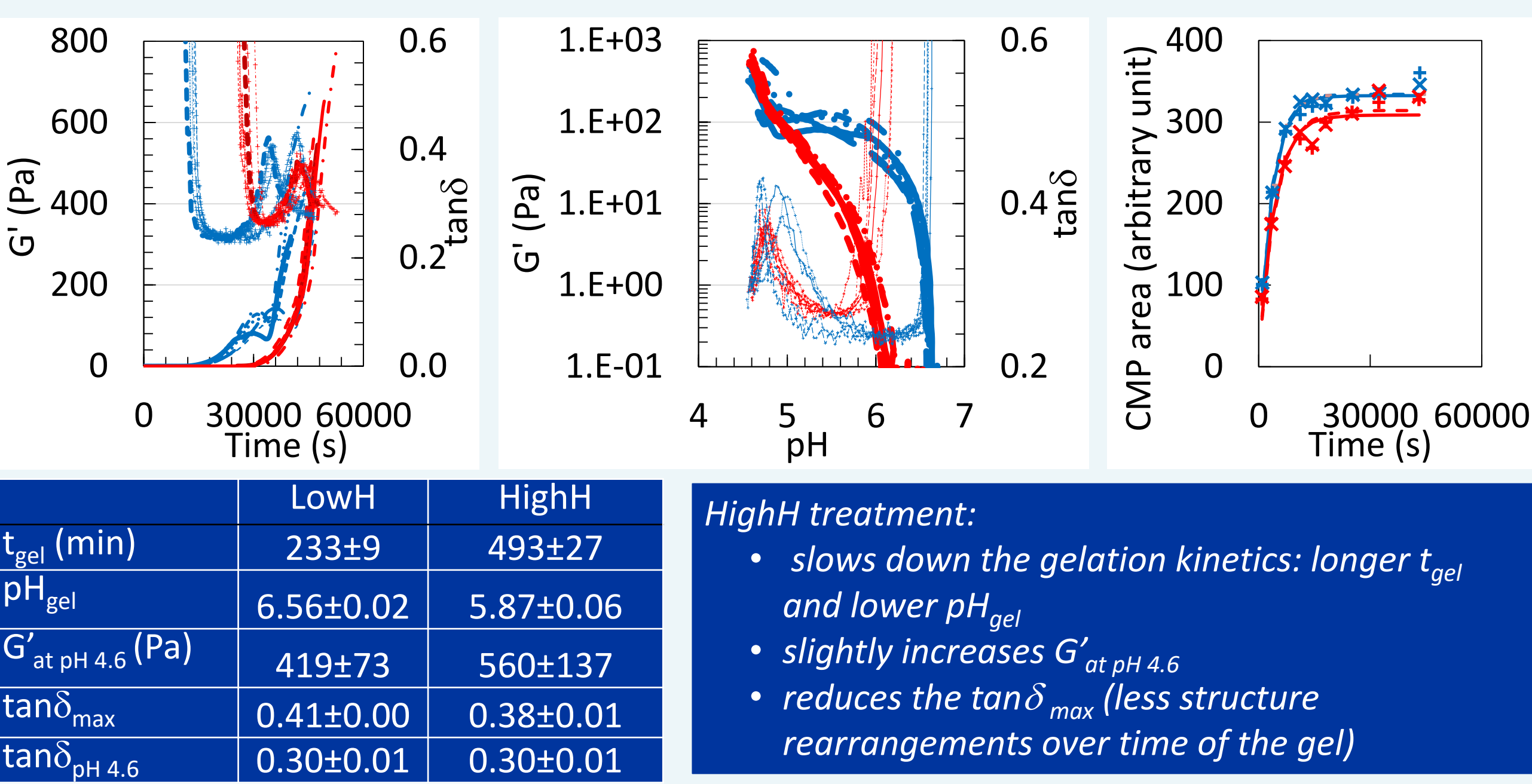
- ✓ In France, Fresh cheese production from cow's and goat's milk accounts for 600,000 tonnes a year (source: L'économie laitière en chiffres, 2019).
- ✓ There is very few published work on the drainability of acid-rennet curds. Little data is available on the effect of technological factors on the draining capacity of the latter gels.
- ✓ Some studies on the effect of milk preheating, but virtually none on its effect on gel drainage
- ✓ The main aim of this work was to study the effect of 2 preheating treatments of milk on acid-rennet induced gelation and drainage

## STRATEGY

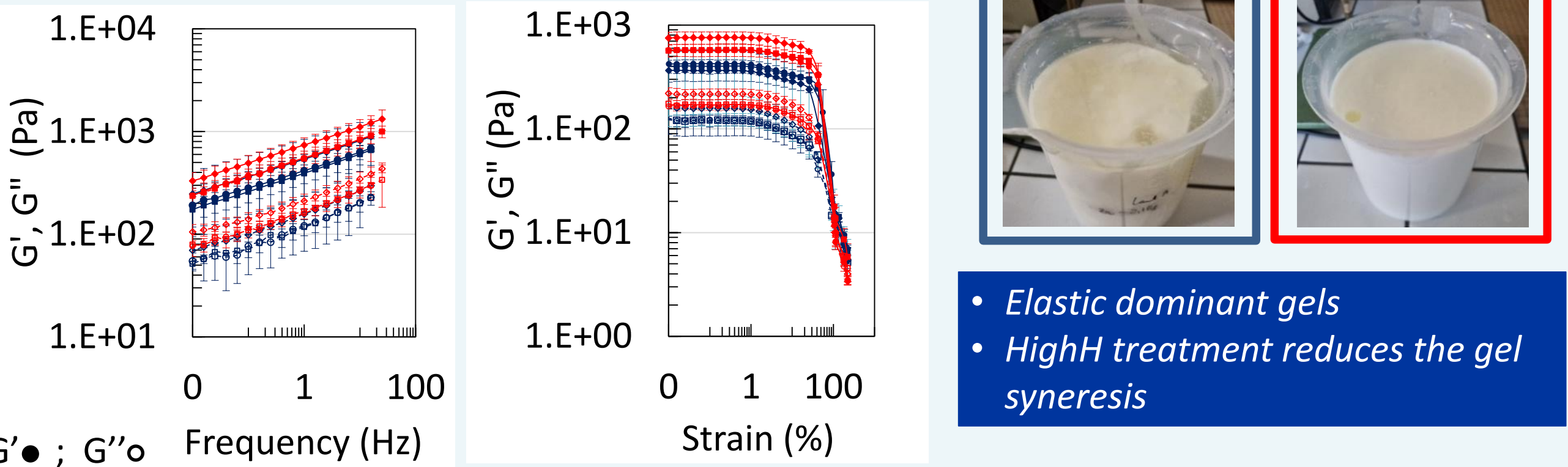


## RESULTS

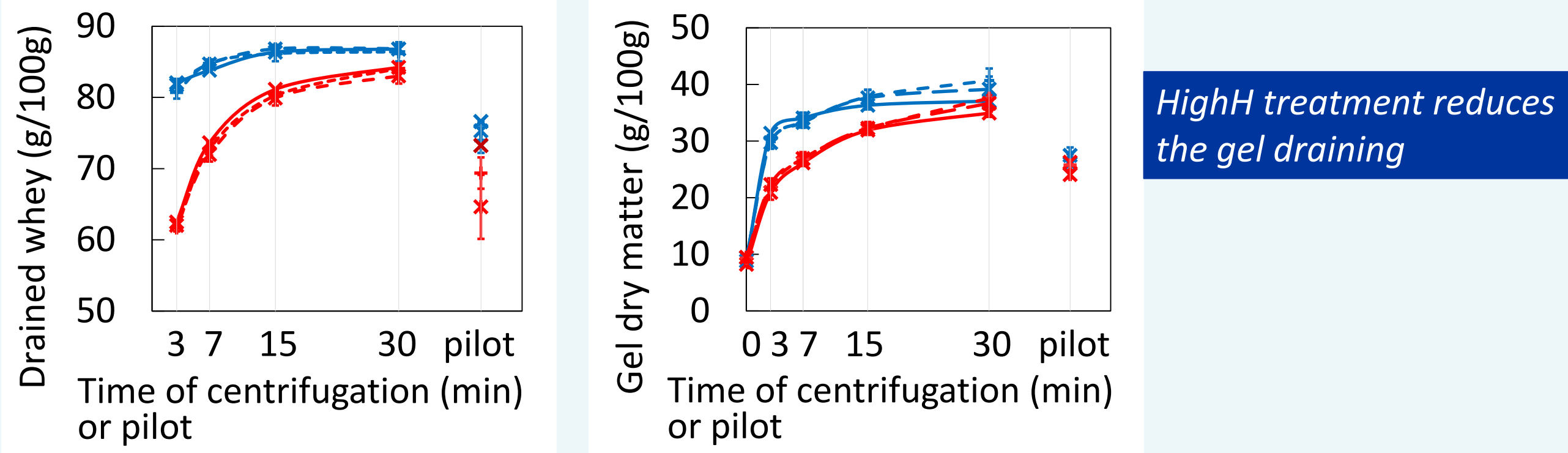
### 1. Formation of acid-rennet gel



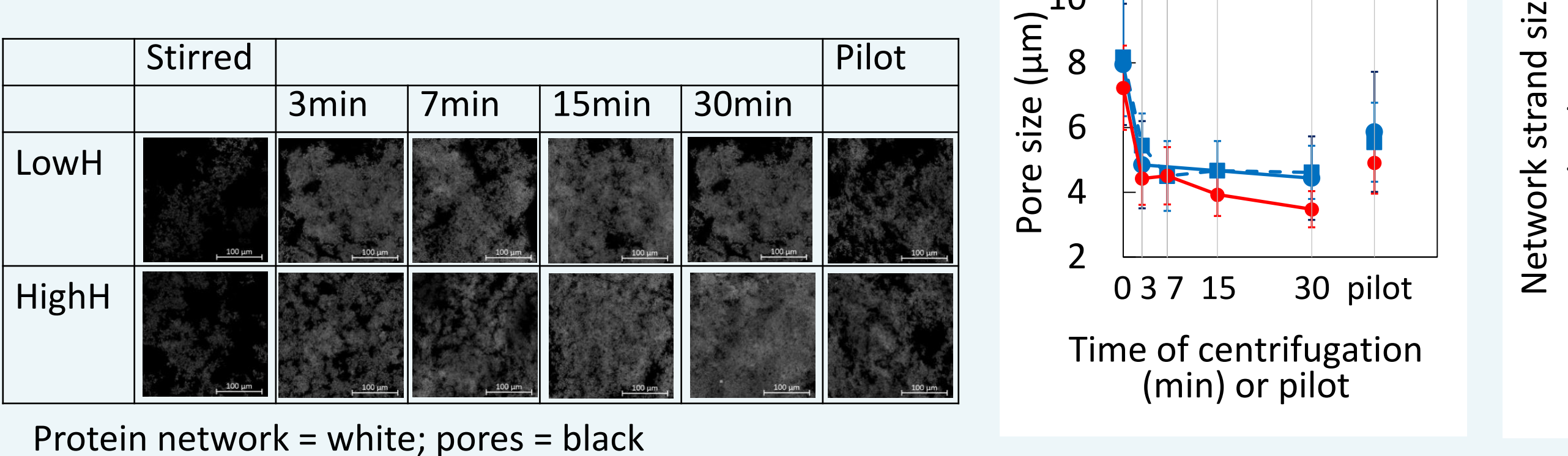
### 2. Rheology of acid-rennet gel



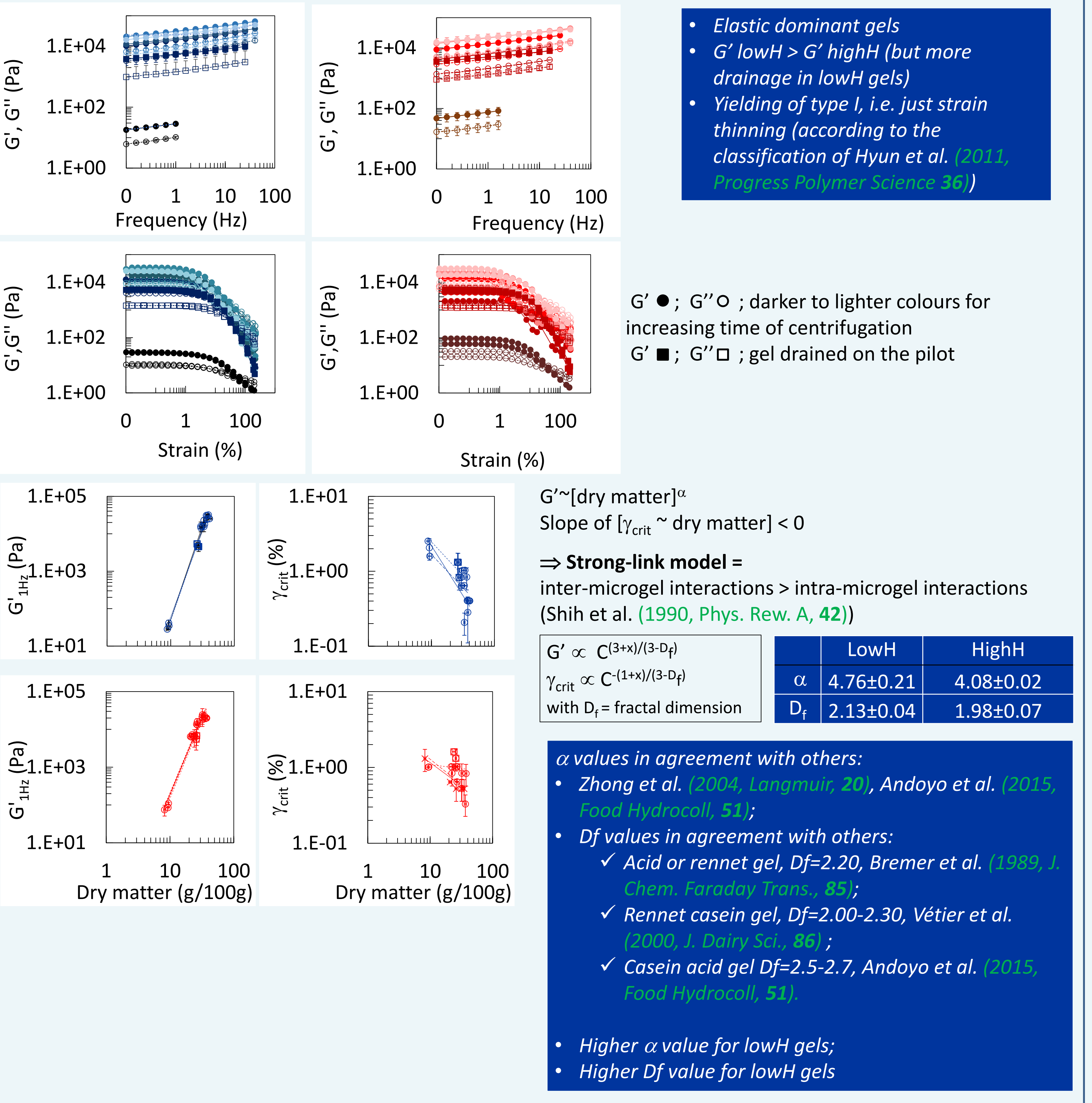
### 3. Gel draining



### 5. Microstructure of stirred and drained gels



### 4. Rheology of stirred and drained gels



## CONCLUSIONS & PERSPECTIVES

### About acid-rennet gels

- Acid-rennet gels before and after their drainage are elastic dominant gels with few interactions between protein building blocks;
- But Interactions between protein building blocks (# microgels) were stronger than interactions inside protein building blocks;

### About the effect of the heat treatment

- The highH treatment of skim milk (95°C-120 s), as compared to the lowH treatment (72°C-20s), slows down milk gelation and leads to a gel less prone to structure rearrangements over time, due to the presence of whey protein aggregates, as in the rennet gelation of preheated milk;
- Consequently, the drainage of highH gels was reduced and drained gels were less packed.

### This study has allowed to:

- Develop methods to follow the drainage and the properties of drained gels ;
- Better understand the drainage of these gels.

### Acknowledgments

The study was coordinated by ACTALIA and funded by the CNIEL (Centre national interprofessionnel de l'économie laitière).  
The authors are grateful to David Legland (BIA, INRAE) for his help with image analysis, to Pascaline Hamon for CMP analysis, to Françoise Boissel for nitrogen analysis and to Lydie Frogerais for milk preparation.