

INFLAMMATORY POTENTIAL OF HIGH-PROTEIN HYBRID YOGURT

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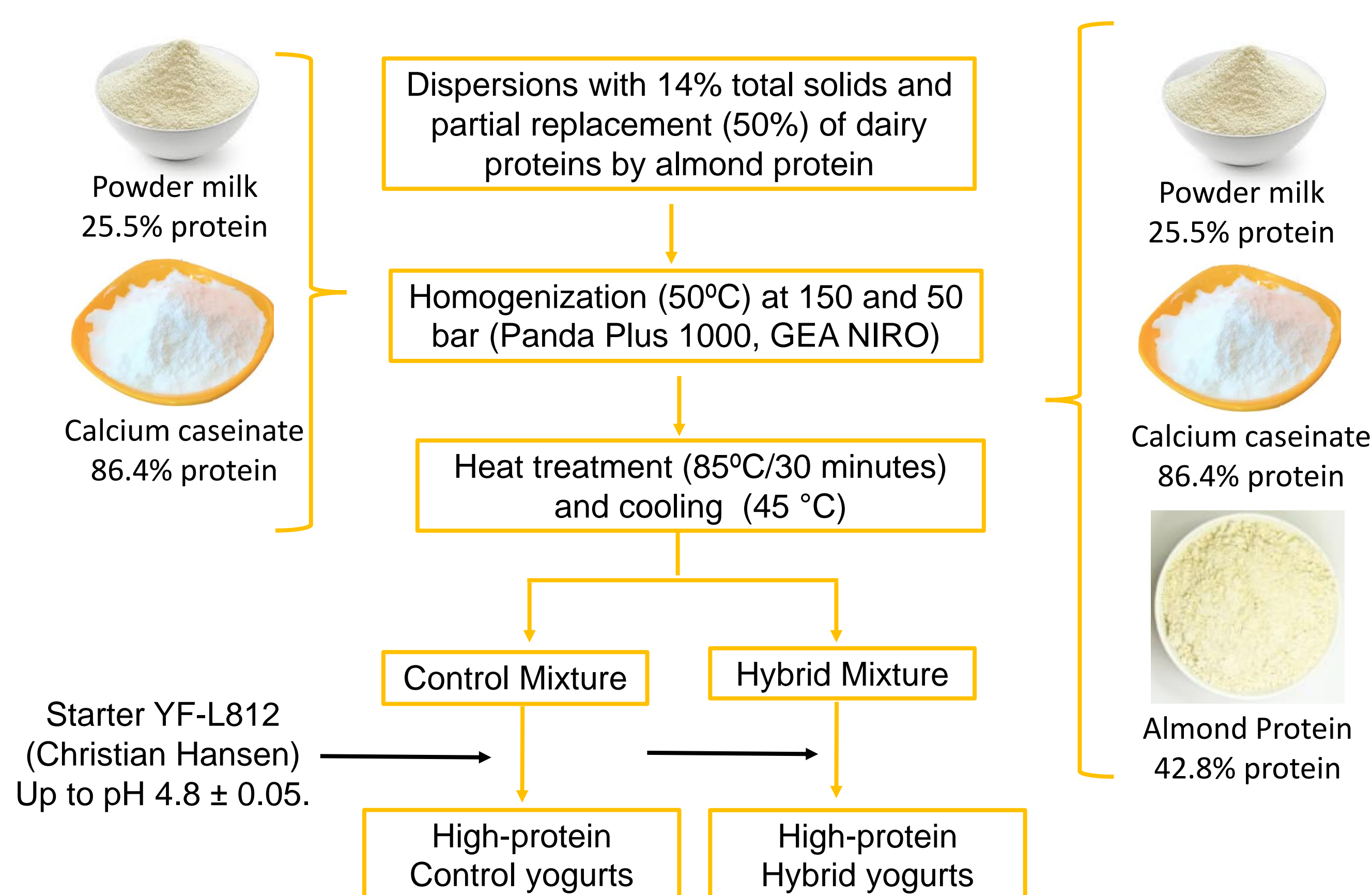
INTRODUCTION

Partly replacing dairy proteins with plant proteins in processed foods is a potential alternative strategy for creating a more sustainable food system. Furthermore, with the growth of the elderly population worldwide, there is an interest in developing foods to promote the health of the elderly

OBJECTIVE

This study aimed to evaluate the impact of partial replacement (50%) of dairy proteins by almond protein in high-protein yogurts on the inflammatory potential after *in vitro* simulation of the gastrointestinal digestion of control and hybrid yogurts under digestive conditions of elderly individuals (INFOGEST).

MATERIALS AND METHODS



RESULTS

The hydrolysates obtained at the end of digestion of both products did not show a pro-inflammatory effect on macrophages (RAW 264.7 cells) or adipocytes (3T3-L1 cells), since no increase in the secretion of the pro-inflammatory cytokines TNF- α (Figure 1) and IL-6 (Figure 2) was observed, respectively.

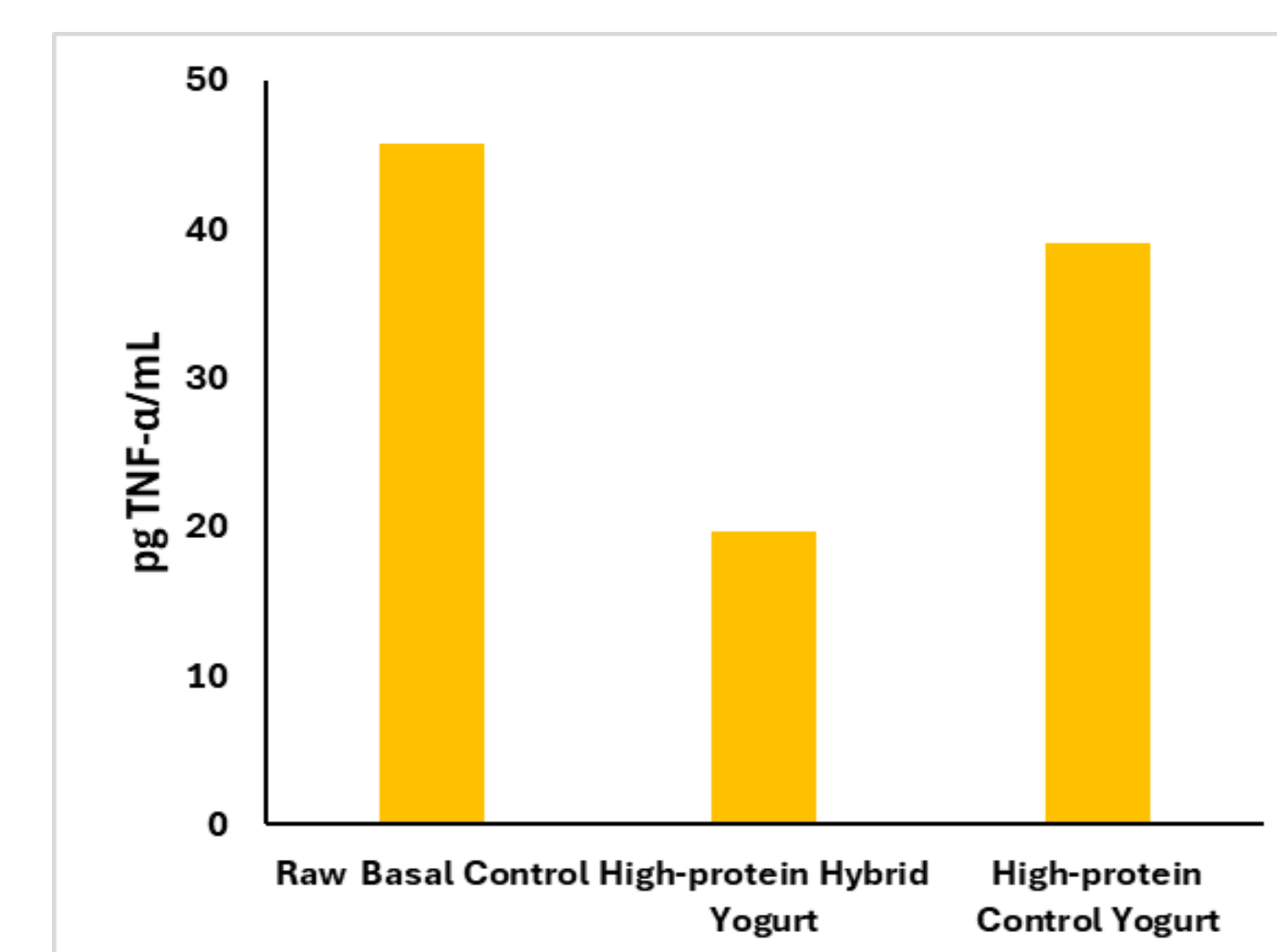


Figure 1. Effect of partial replacement (50%) of dairy proteins by almond protein in high-protein yogurts on production of TNF- α in differentiated Raw 264.7 cells.

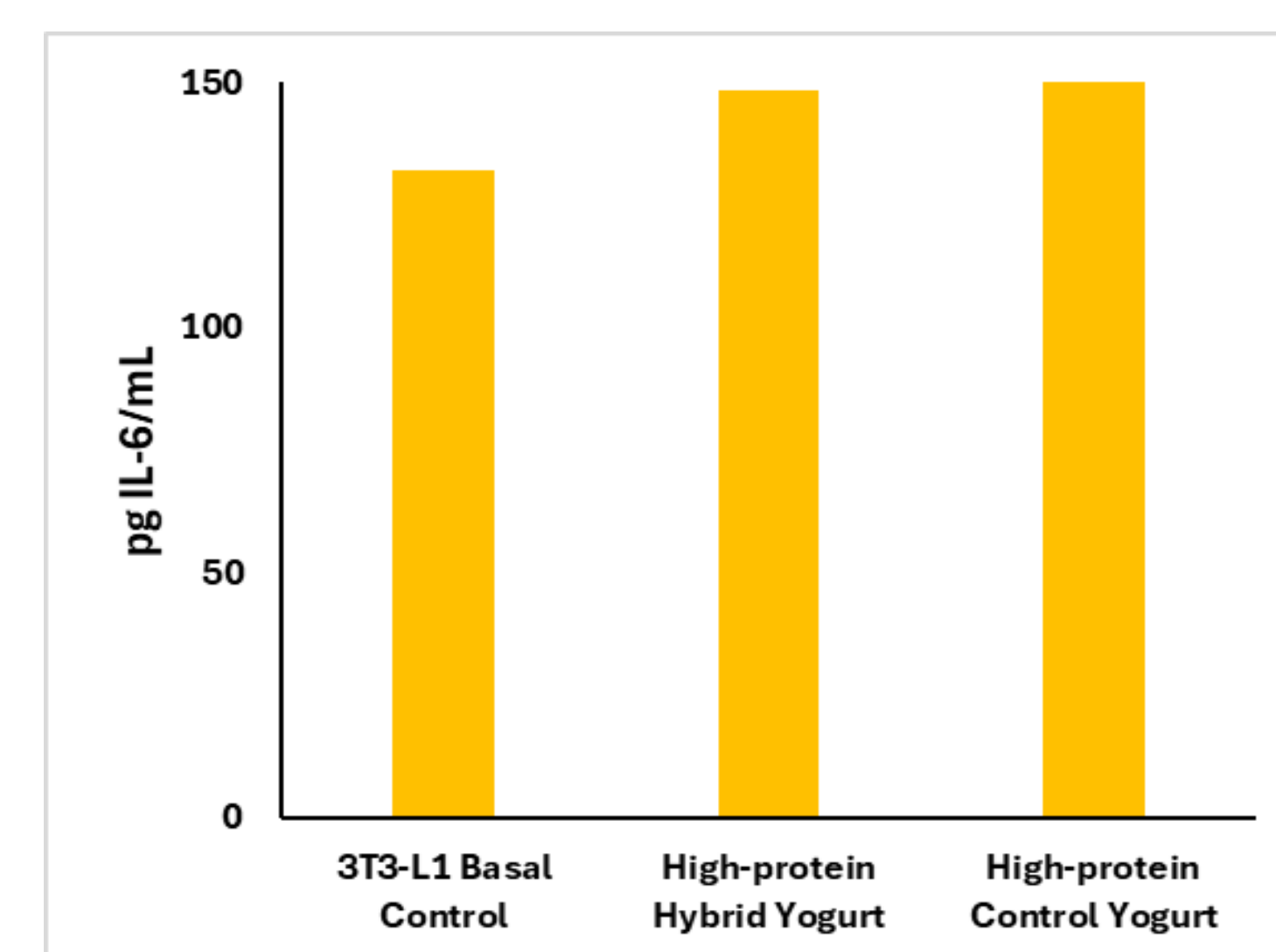


Figure 2. Effect of partial replacement (50%) of dairy proteins by almond protein in high-protein yogurts on production of IL-6 in differentiated 3T3-L1 cells.

CONCLUSIONS

The partial replacement of dairy proteins with almond proteins in high-protein yogurts may be interesting with a focus on more sustainable food systems. Furthermore, hybrid products containing high nutritional value dairy proteins can be used to maintain the health of the elderly population.

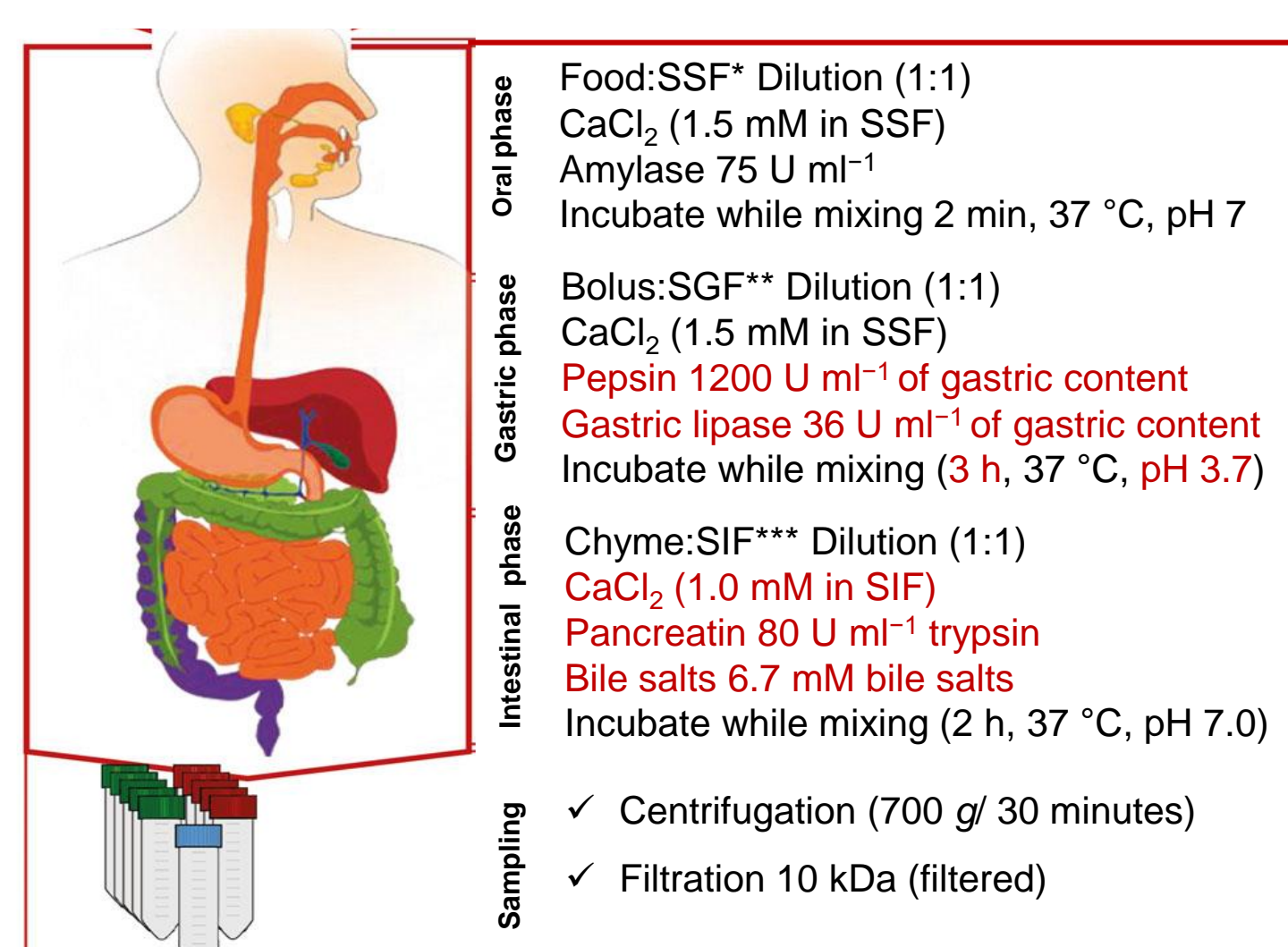
ACKNOWLEDGEMENTS

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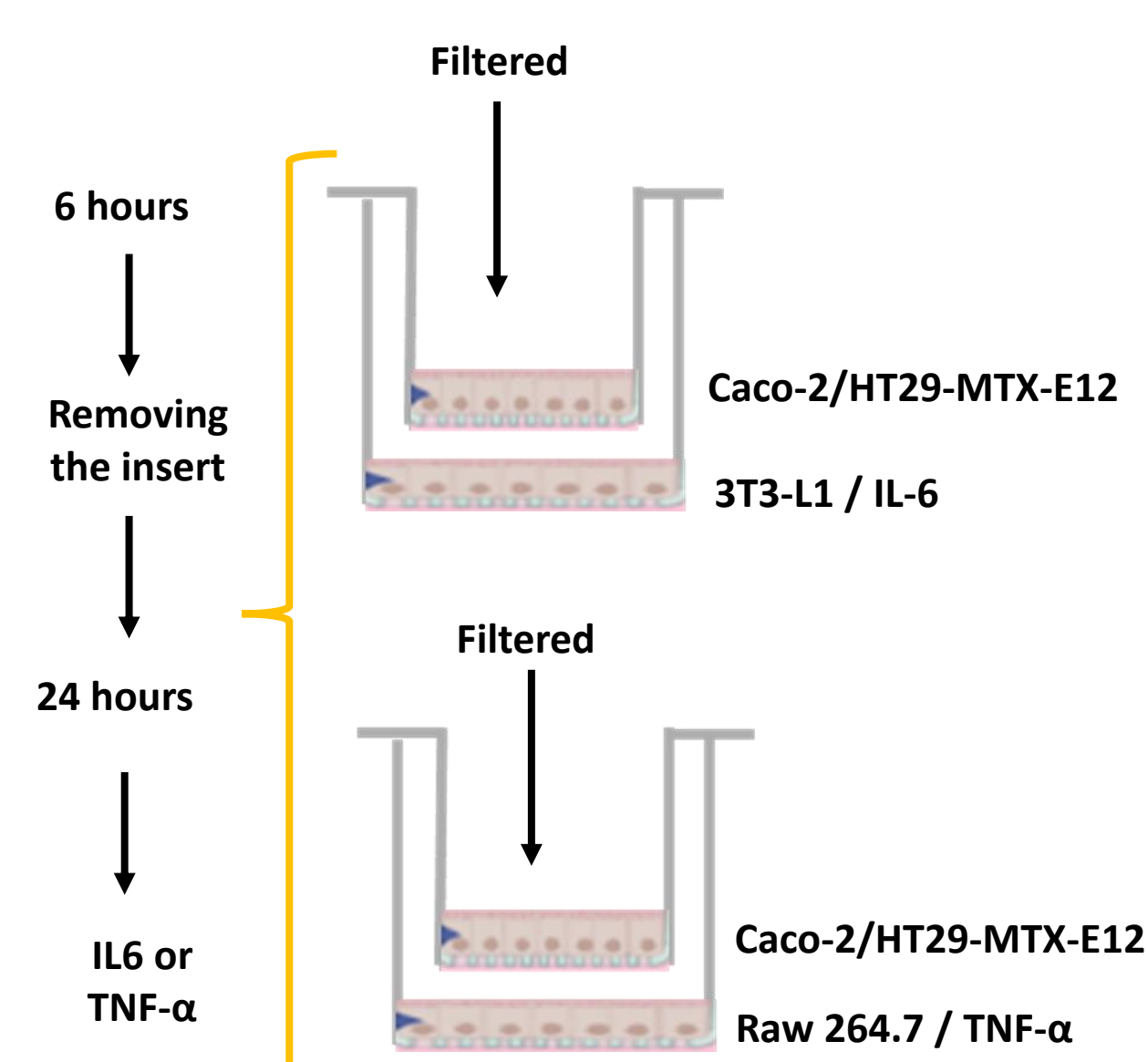
- BRODKORB, A. et al.. INFOGEST static *in vitro* simulation of gastrointestinal food digestion. *Nature Protocols*, 14, 991-1014. 2019.
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 MACHADO, M. Anti-obesity potential of a yogurt functionalized with a CLNA-rich pomegranate oil. *Food Research International* 173 (2023) 113364.

In vitro simulation of the gastrointestinal digestion under digestive conditions of elderly individuals (INFOGEST)



*Simulated Salivary Fluid. **Simulated Gastric Fluid; *** Simulated Intestinal Fluid
 BRODKORB, A. et al (2019); MENARD et al. (2023)

In vitro permeability assay using cell co-culture (Caco-2/HT29-MTX)



MACHADO et al. (2023)