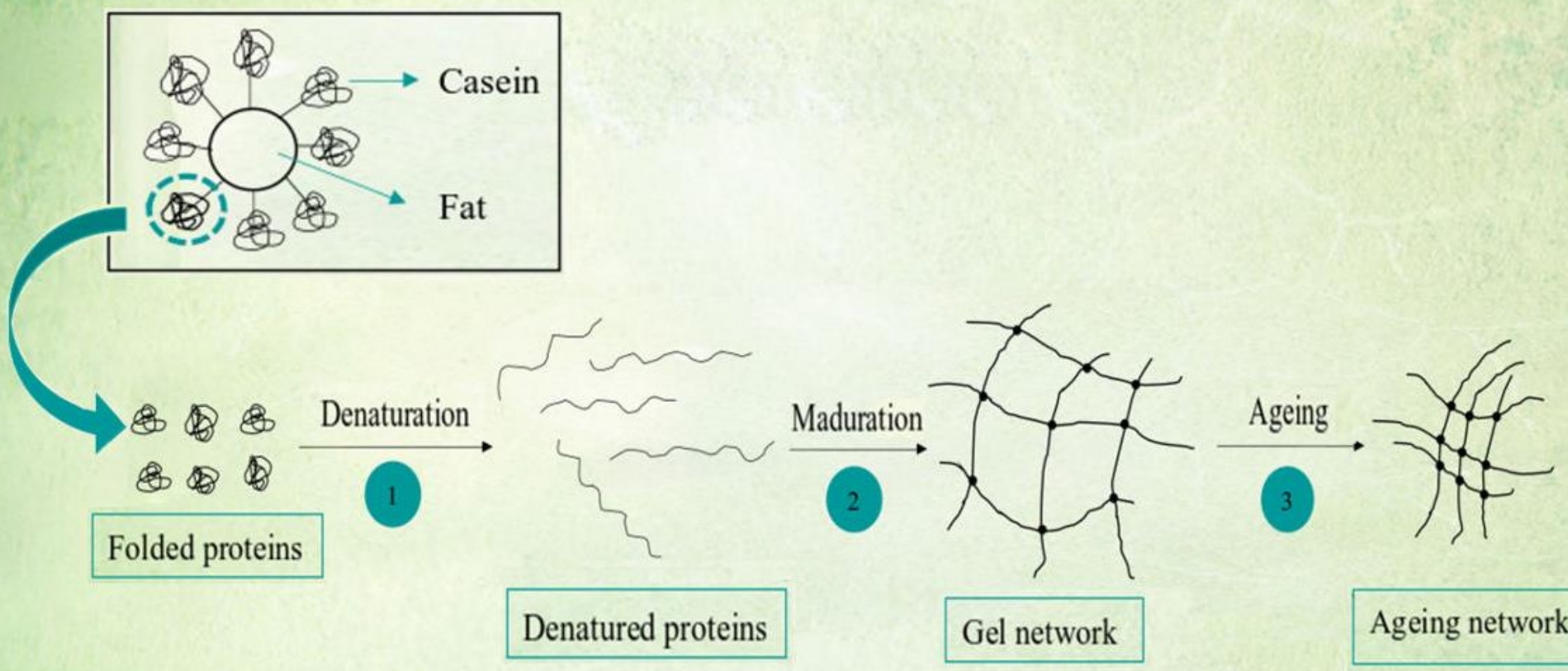
FISICOCHEMICAL VARIABLES AFFECTING THE FORMATION AND AGEING IN CASEINATE GELS

INTRODUCTION

Dairy products are very important in the food industry, however it is less known to the public, the physical aspects of the milk, which must be combined naturally with the chemical and biological aspects. Here, I will study briefly the physical and chemical variables affecting the formation and ageing in caseinat gels which play an important role in cheeses and yogurts. In particular, I will focus in the case of yogurt.



1 GEL CHARACTERISTICS AFFECTING THE TEXTURAL PROPIERTIES

- Intensity of the interconnections between filaments
- The relative abundance of entanglement points
- Mechanical elasticity of the filaments
- The average volume of cavities in the network
- Serum viscosity, acidity and ionic strenght
- The presence of sugars in the serum

2 PHYSICOCHMICALS VARIABLES AFFECTING THE TEXTURAL PROPIERTIES

- Temperature
- Pressure
- Solid fraction added
- pH
- Ionic strength
- Hydrophilic/phobic interactions with solvent
- Electrostatic interactions between filaments
- Presence of enzymes

3 PHYSICOCHMICALS VARIABLES AFFECTING GEL AGEING

- Storage temperature
- Amount available O2
- Electrical and/or mechanical barriers

CONCLUSIONS

We have discussed what physical characteristics on the microscopic texture of yogurt have more influence: the number and intensity of the various interconnections in the network, the relative porosity of the network, and the viscosity of the serum.
The main factors that affecting more include temperature, pH, factors that are amplified by the metabolism of microorganisms, which produce effects on taste (acidity, aromas) and on texture (lumpy, repair serum, consistency).

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