

SCHOOL COMPANY UNION – STUDENTS GET IN TOUCH WITH LOCAL FOOD PRODUCTION COMPANIES



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Ingredients for the yoghurt production

- 2 liters of fresh semi-skimmed milk
- 0,3 tsp. of starters



Production of yoghurt

1. Preperation:

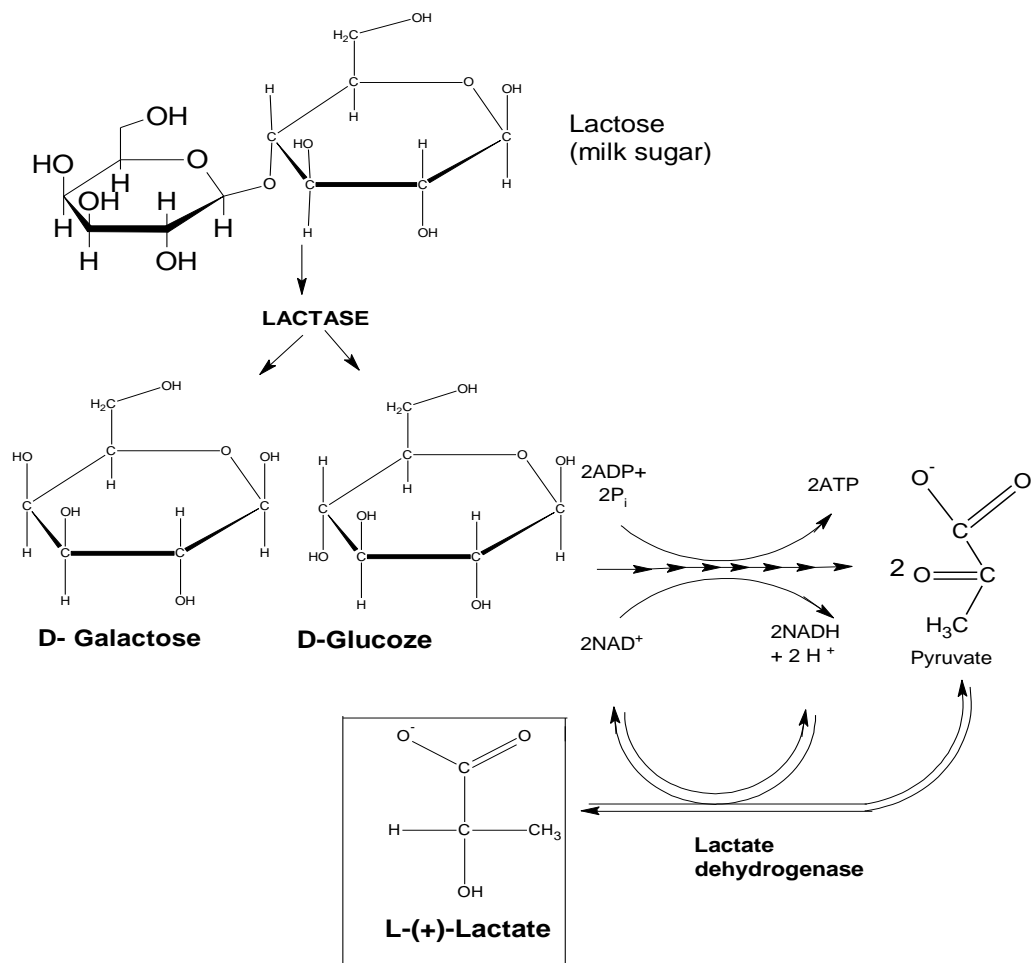
- Heat milk in a stainless steel pan over medium heat until it reaches 82°C.
- Pour heated milk into clean canning jars and cool, either by sitting on the counter or in a cool water bath until the temperature drops to 46°C.
- Add culture-2 tablespoons (of yoghurt from a previous batch, store bought yoghurt) per quarter of milk. Lightly stir just enough to incorporate into the milk.
- Place the jars into the oven with the light on for 12-24 hours. The light should provide a consistent heat of about 43°C.
- Put jars into the refrigerator until the yoghurt is cold and set.
- Once the yoghurt is set you can pour off the liquid whey from the top or strain the yoghurt using cheesecloth for a thicker consistency.
- At the end, you can enrich the flavour by adding some kinds of fruits or jam.

2. Results of yoghurt production in Poland

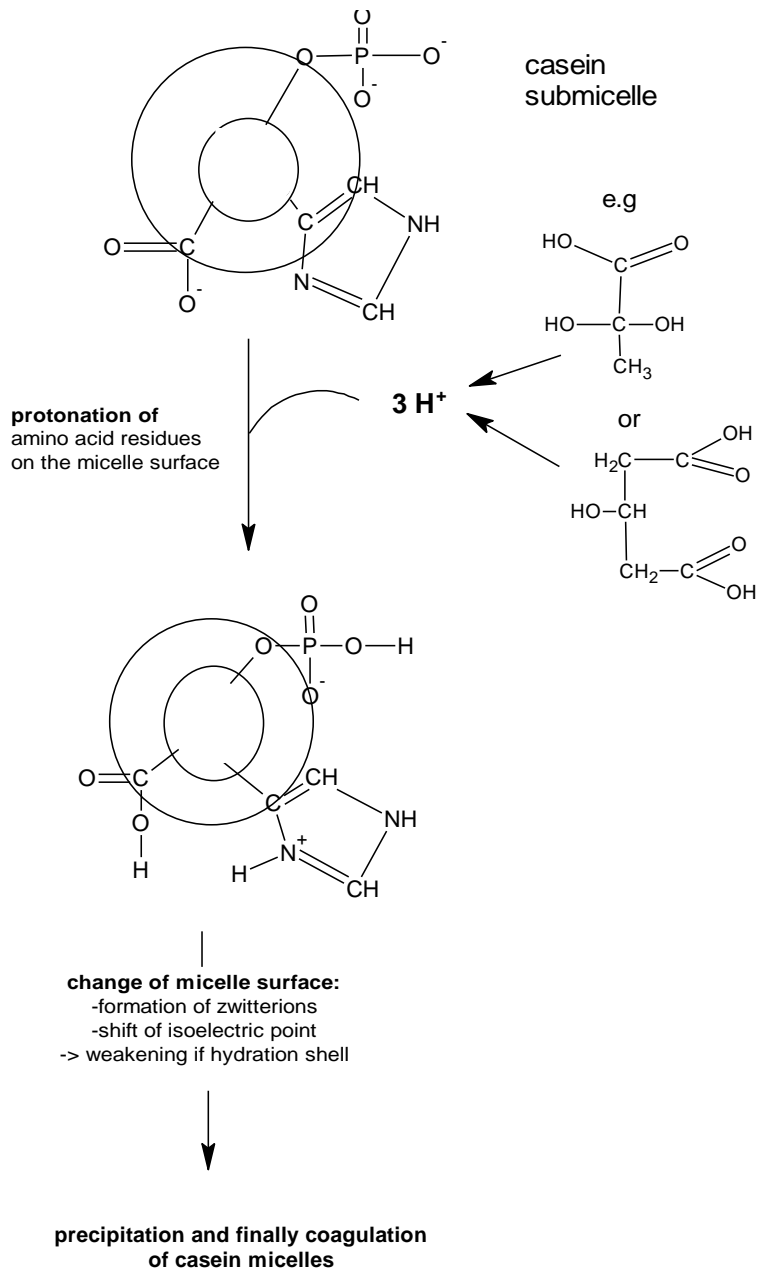


3. Chemical processes of the yoghurt production

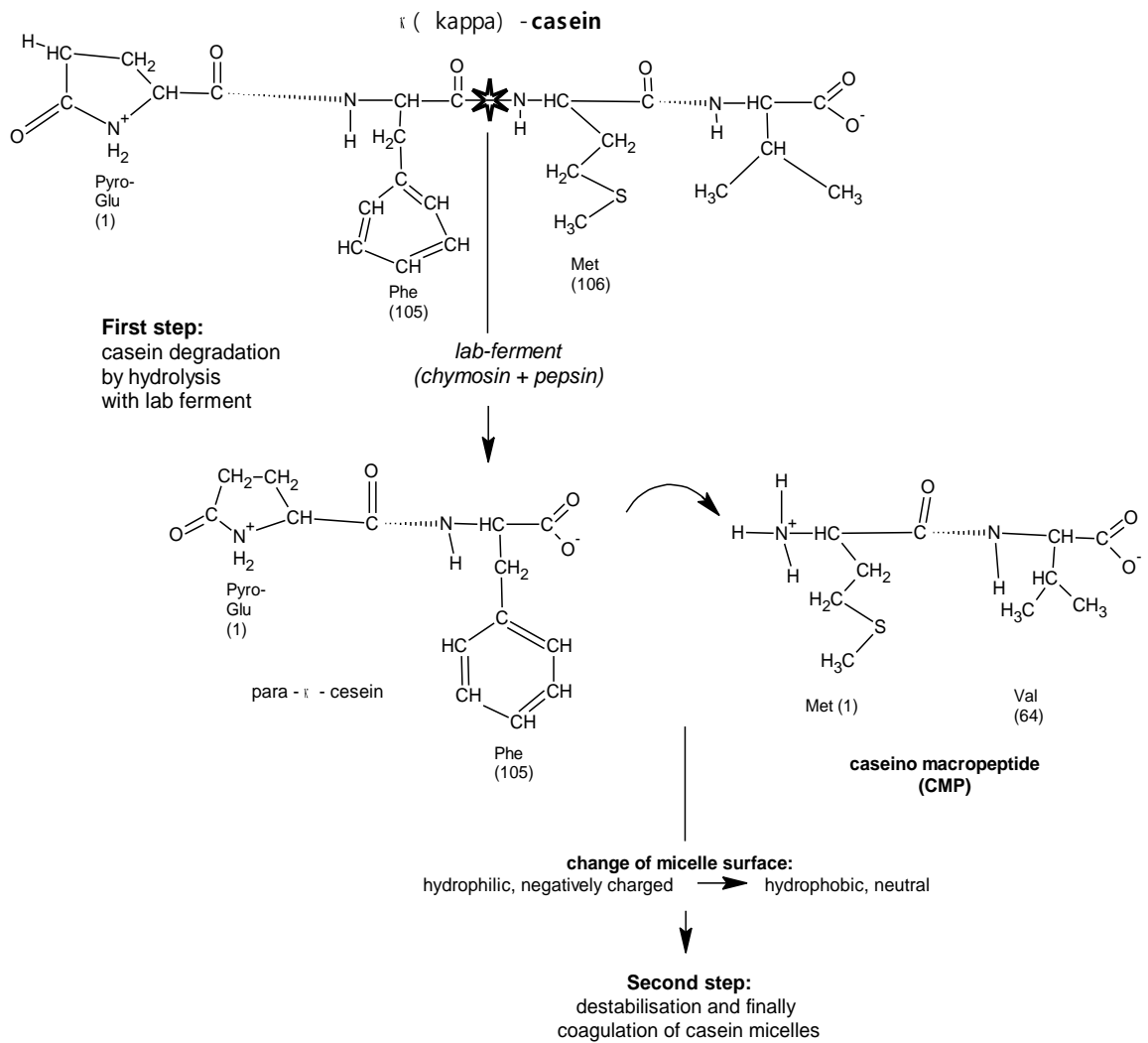
Lactic acid fermentation



Acid Milk Clotting



Enzymatic milk clotting



Ingredients for the Caprino production

- 5 liters of fresh semi-skimmed milk
- 0,3 ml of rennet
- 0,1 g of starters
- salt (1 g per 100 g of cheese)



Production of Caprino

1. Preparation:

- The first step is to heat the milk up to 26°C while stirring it.
- In the meantime we need to turn on the thermostat at 23/24°C.
- Then add the rennet and the starters and stir for 2-3 minutes.
- Let it rest for 24 hours during which an enzymatic coagulation is operated by the rennet and the starters which make the environment acid.
- Cover the pot with tinfoil.
- Cut the curd with a knife following a regular order: this is important to facilitate its separation from the whey, when you pour it in a form with a cloth.
- Now the process is near to the end: close the cloth, tie it up and put it in the fridge for another 24 hours.
- The remaining whey will drip in the basin below.
- On the next day there's the final step: adding salt (1 gram per every 100 g of cheese) and mix it again!
- We came up with almost 1,3 kg of cheese so we added 13 grams of salt



Ingredients for the Mozzarella production

- 300 ml of water
- 1,5 tsp. of lemon powder
- 2,5 ml of rennet
- 3,7 liters of whole milk
- 1 tsp. of salt



Production of Mozzarella

1. Preparation:

- First you prepare the lemon powder and rennet
 - ➡ 240 ml of water + lemon powder (7 g)
 - ➡ 60 ml of water + rennet (2,5 ml)
- Next you heat the milk up to 32-34°C and add lemon powder
- Then you remove the pot from the stove and add rennet
 - ➡ stir 30 seconds
 - ➡ wait 5 minutes
- By now the milk should be curdled (if it is not curdled – wait)
- Next you cut the curd into square blocks like a grid pattern
- Now you cook the curds at a temperature of 42-44 °C and stir gently
- Then you stop heating and stir for 5 minutes
- Use a strainer to separate the curds from the whey
- Boil the curds at a temperature of 86-88°C for 5 minutes
- Take the curds out and stretch and form them.

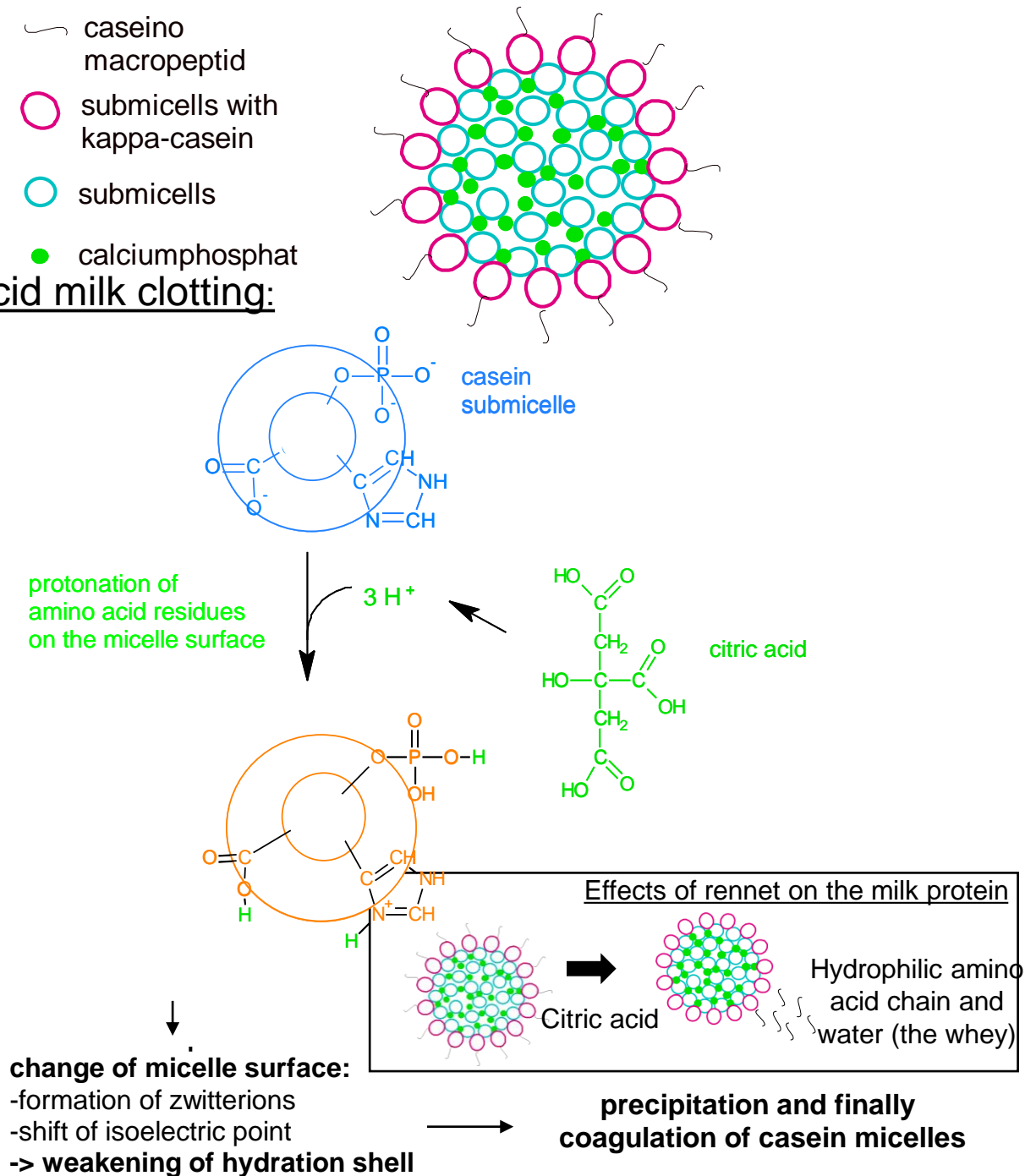
2. Our produced mozzarella:



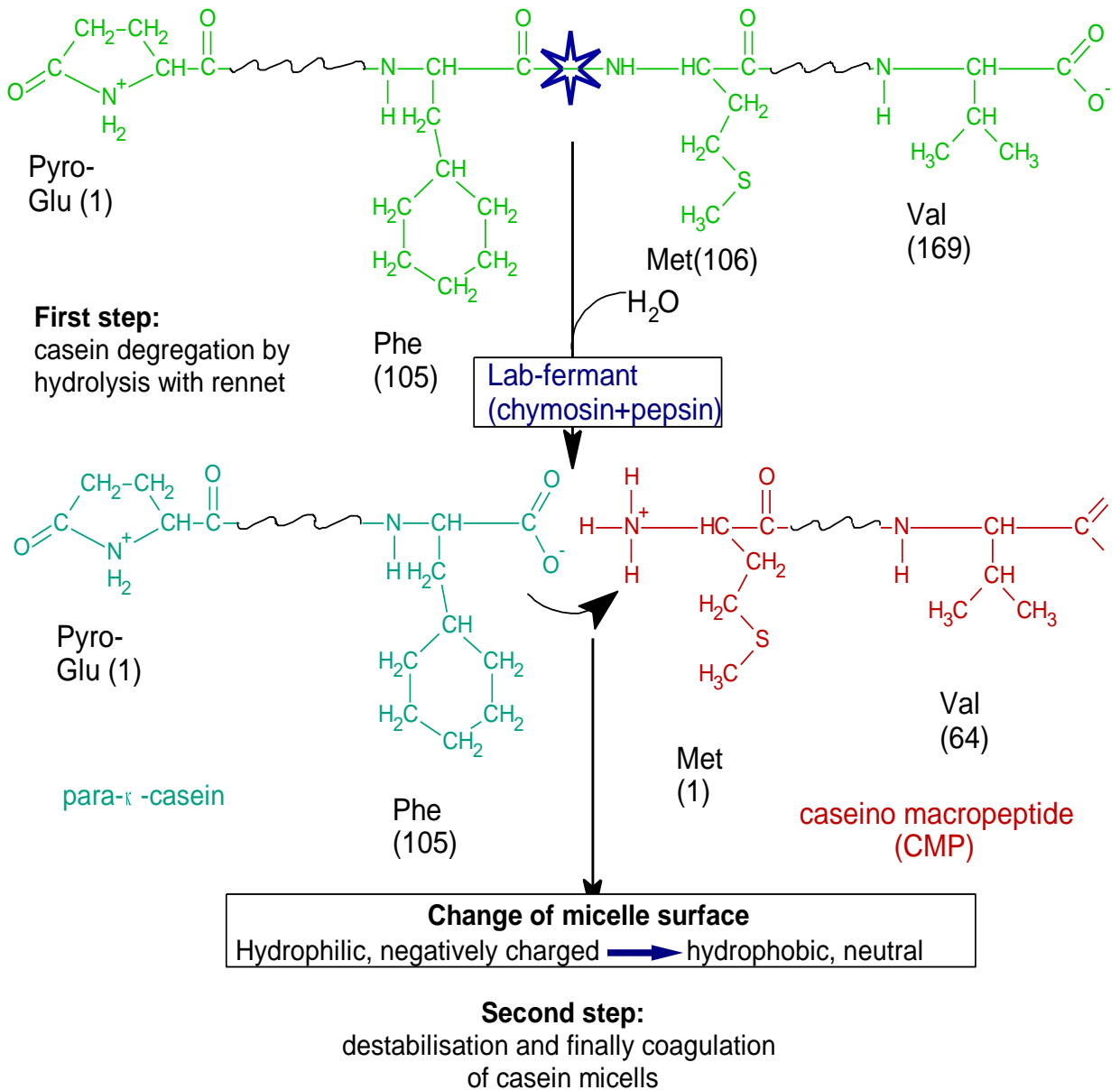
3. Chemical processes of the Mozzarella production

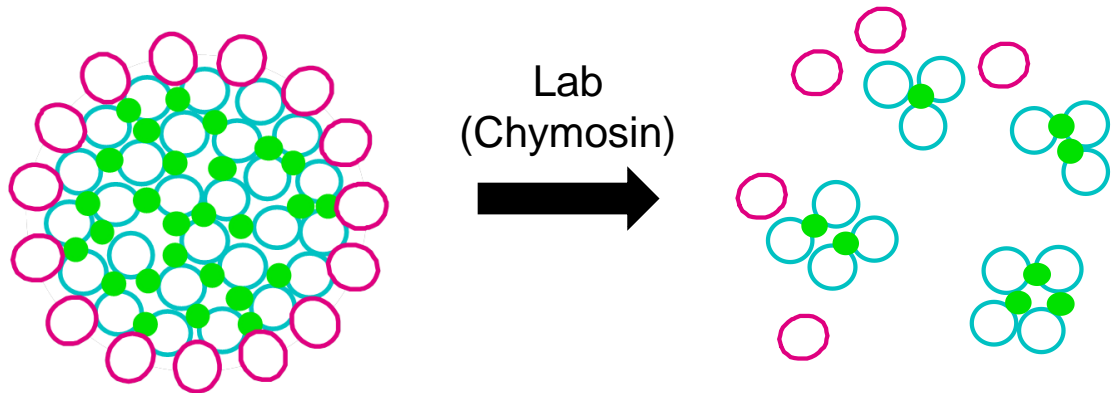
- caseino macropeptid
- submicells with kappa-casein
- submicells
- calciumphosphat

Acid milk clotting:



Enzymatic milk clotting with rennet





The lab enzyme splits the kappa-casein of the submicelles and casein fails.

Because of this process cheese is easier to digest than cow milk.



