**2. Separation of bacteria by centrifugation**

2.1 Fill two times 40 mL of fermen-tation medium in two 50 mL Falcon-tubes.

2.2 Centrifuge both Falcon-tubes at 5000 rpm for 10 minutes.



supernatant

Überstand

pellet

Pellet

Left tube: after centrifugation

**3. Lactic acid concentration by distillation**

3.1 75 mL of supernatant will be distilled (Lactic acid: 122 °C).

3.2 Distille app. 50 mL H2O.

3.3 Cool down the lactic acid solution.

**4. Polymerization of lactic acid**

4.1 Materials for polymerization:



**Test tube rack**

**Funnel**

**Petri dish**

**Test glass holder**

**Test glass**

**SnCl2**

**Burner**

**Lighter**

**Probe**

**Protection goggles**

**Spatula**

4.2 Pipette 5 mL of lactate solution in  
a test glass.

4.3 Add in a test glass a little of the catalyzer SnCl2.

4.4 Heat the solution for 5 to 10 minutes under the fume cupboard by steady shaking to avoid boiling retardation.

4.5 When the mass is boiling under an intensive white smoke production, pour the polymerizing mass in a 40 mL beaker.

🡪 By cooling down in the beaker PLA gets solid.

**5. PLA-Degradation by Hydrolysis**

5.1 Add 10 mL distilled water into the beaker and stirr.

 

🡪 PLA slowly gets soluble.