

Methods of Lipid analysis

Done by: Naizabayeva D.
Accepted by: Kenzhebayeva S.S.

Folch method

Principle: lipids are extracted by **chloroform-methanol** mixture, extract is washed from water soluble impurity, dried and then obtained precipitate is weighted.

*nonpolar solvents (**chloroform, benzol, diethyl ether**): destroy complexes arranged by **hydrophobic interactions**.

*polar solvents (**ethanol, methanol**): destroy **hydrophilic** and **electrostatic** bonds.

Reagents: Chloroform and methanol (2:1)

Folch method

Procedure:

1. Extraction
2. Purification
3. Drying
4. Weighting of dry lipid extract

Extraction

200 mg
of tissue

10-15 ml of
chloroform-methano
l (2:1)

25 ml

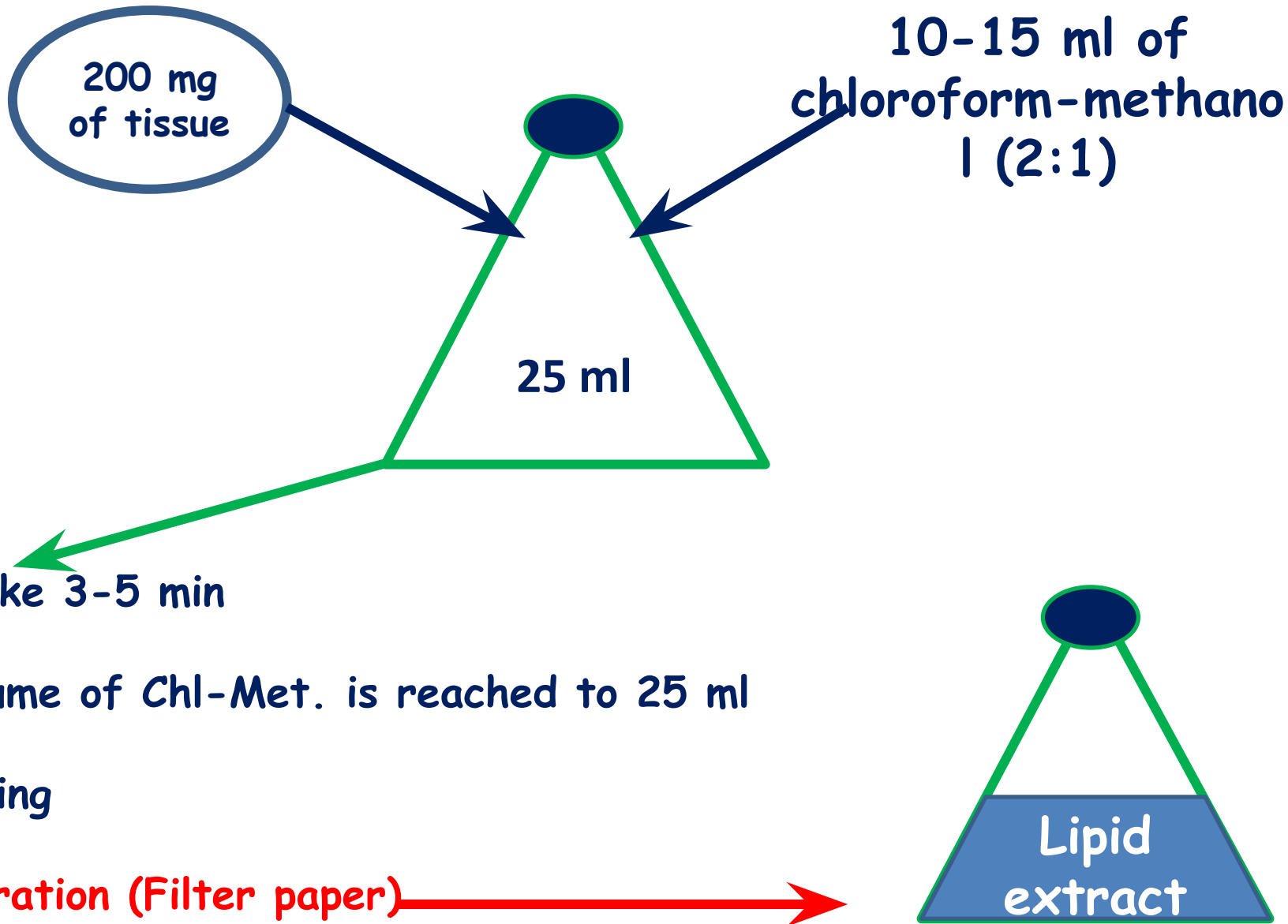
*Shake 3-5 min

*Volume of Chl-Met. is reached to 25 ml

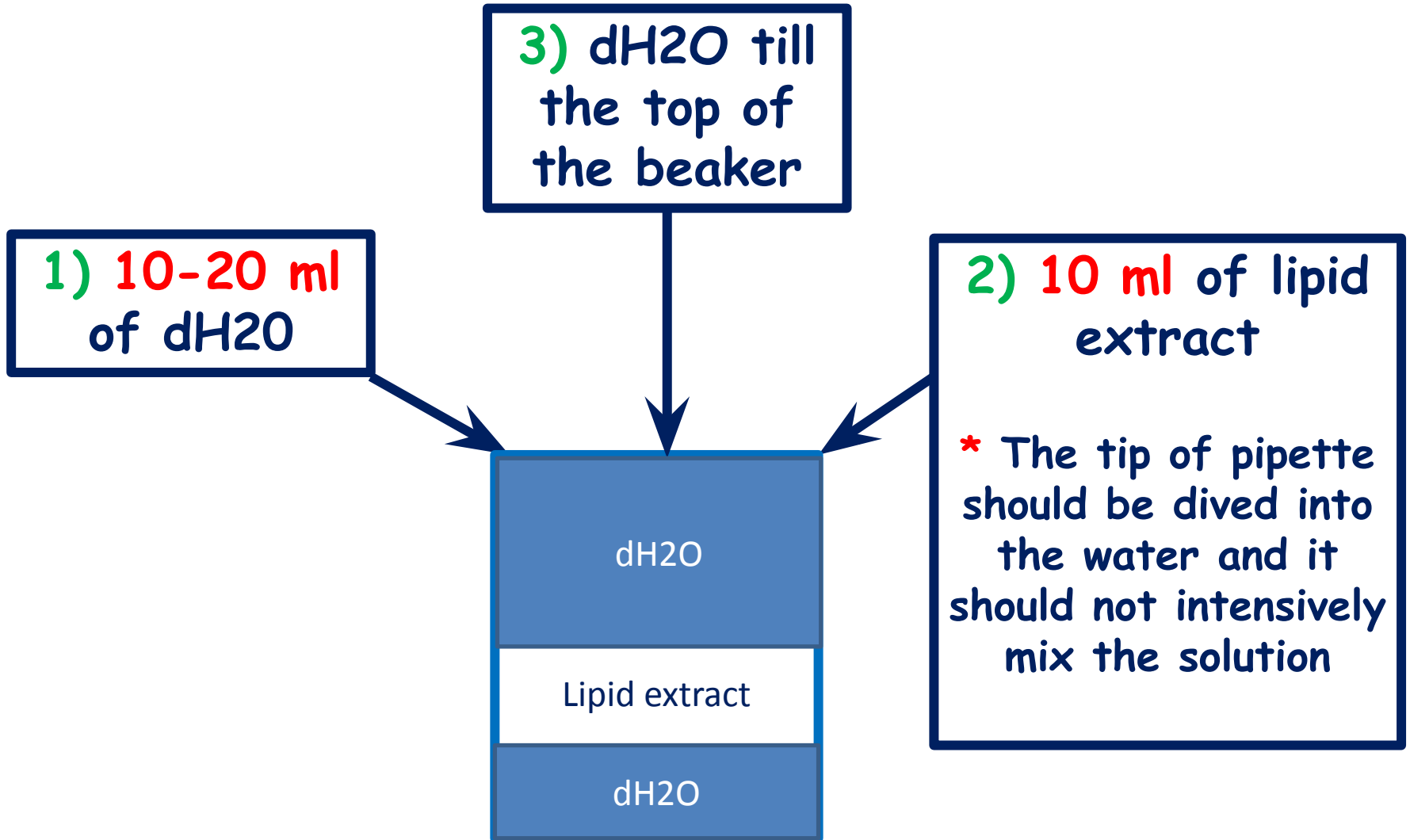
*Mixing

*Filtration (Filter paper)

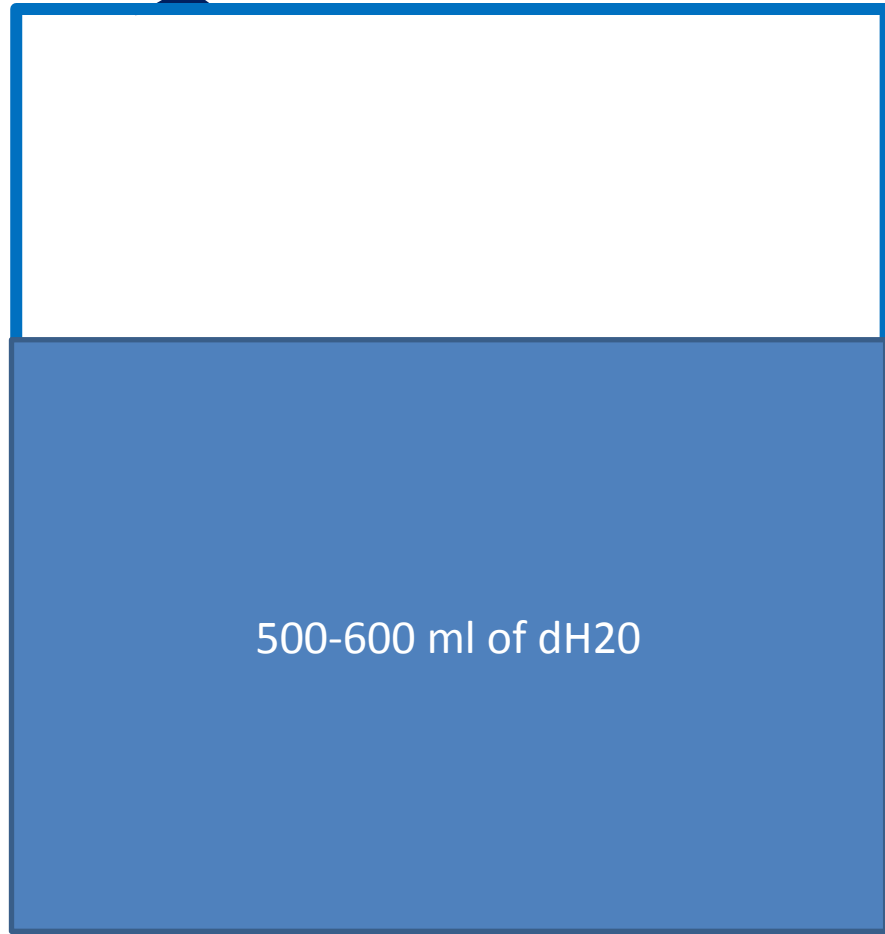
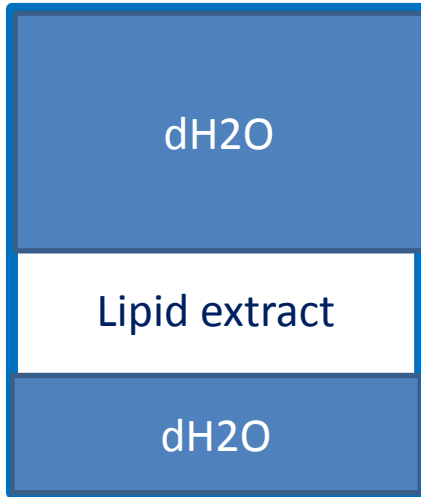
Lipid
extract



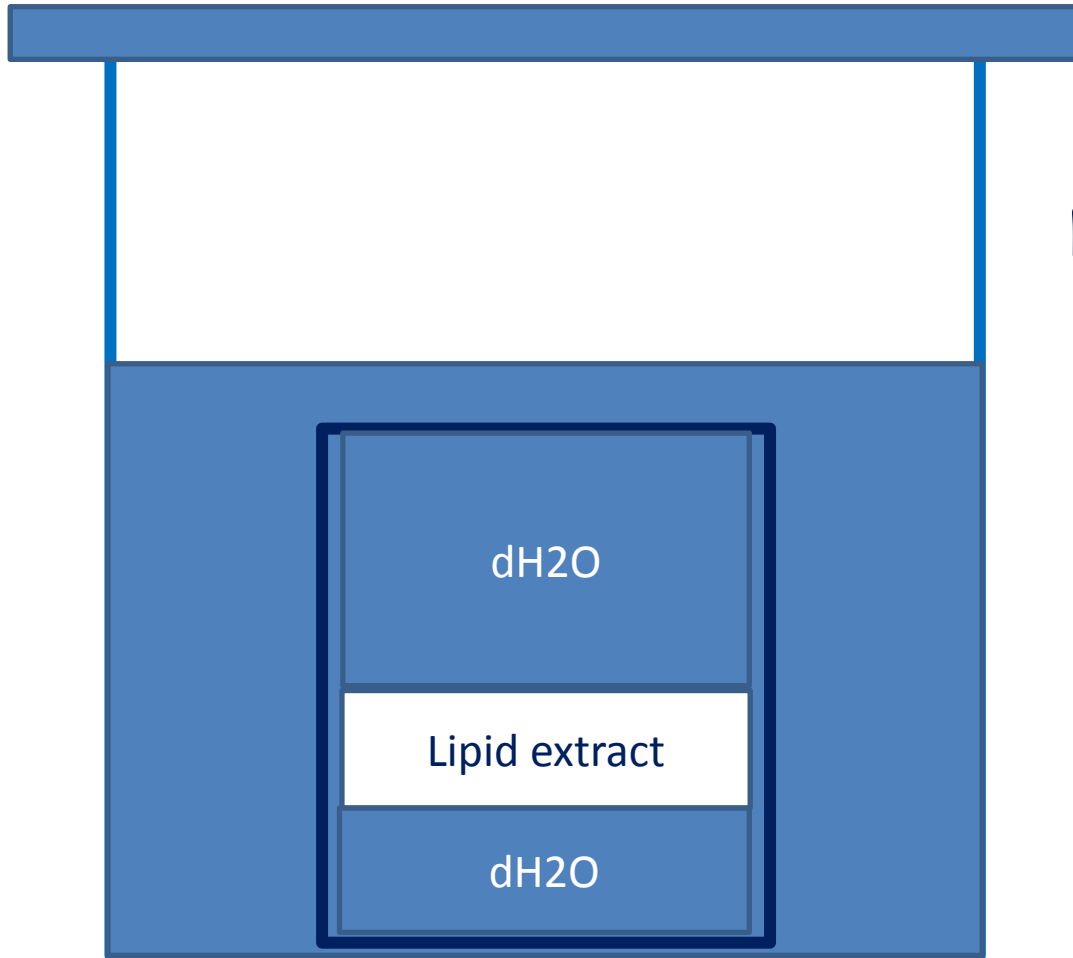
Purification



Purification

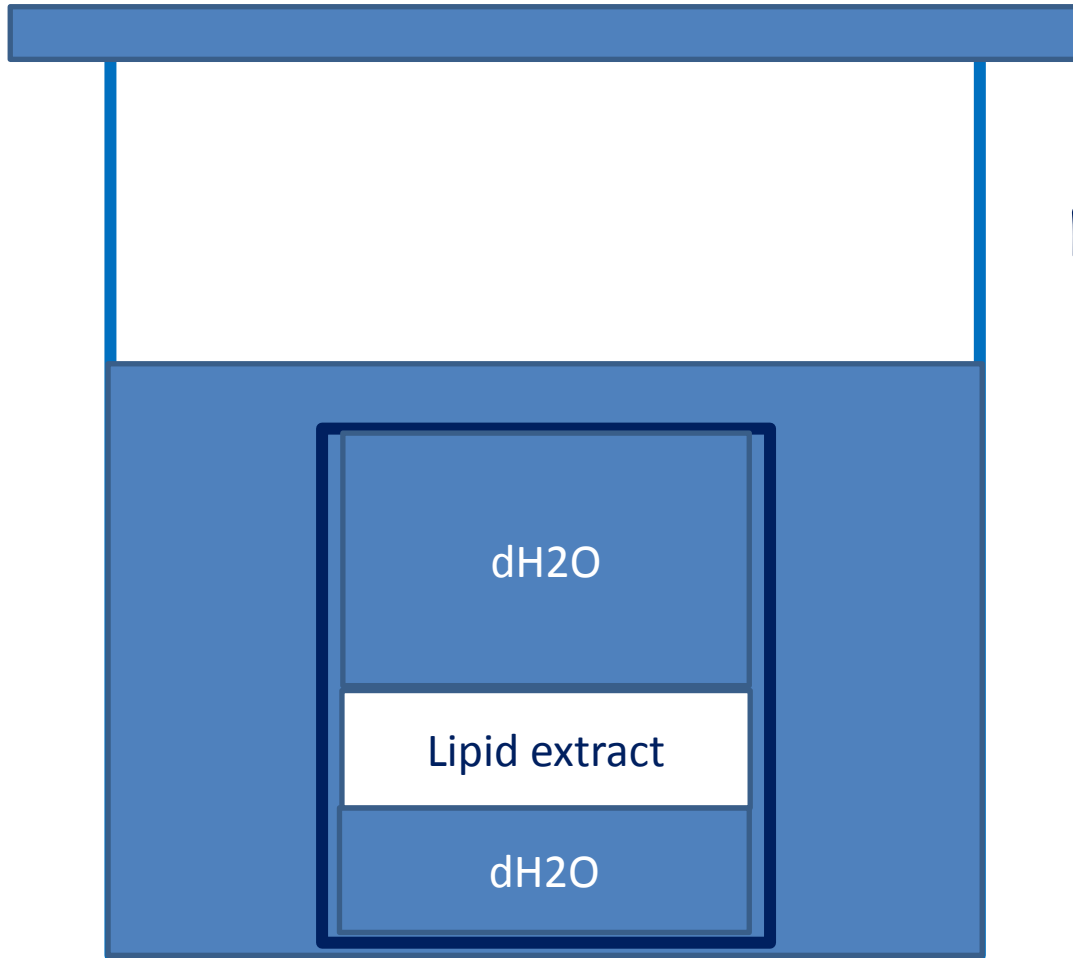


Purification



Covered with glass plate and stayed for a night

Purification



*Covered with glass plate and stayed for a night

*Water soluble components diffused into water

Purification

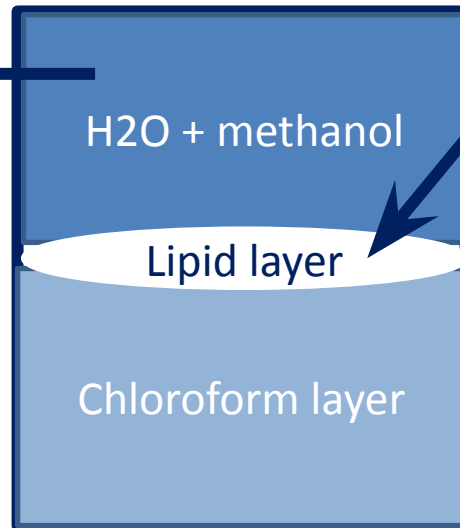
*Next day...



Purification

*Little beaker is taken away from the vessel

1) Methanol-water layer is poured out (2-3 mm is left)



2) 3 ml of methanol is added onto lipid layer to dissolve it

Drying and calculation

- * After dissolving of lipid layer, mixture is poured into clean and dry beaker (weighted beforehand)
- * Then drying is implemented by vaporization on water bath, and continued in thermostat at 50-60°C
 - * Dry precipitate is weighted
- * Lipid consistency is calculated due to mass of dry precipitate in g per kg of initial studying tissue mass.

**Thanks
for
attention!**