



Apr 24, 2020

Dialysis using D-Tubes

Neilier Junior¹, Rafael de Almeida Barros¹, Camilo Elber Vital¹, Samuel Lessa Barbosa¹, João Vitor Aguiar de Oliveira¹, Gabriele Corrêa Rocha¹, João Victor Marques Gonçalves Assis¹, Cauê Neves Oliveira¹, Maria Goreti de Almeida Oliveira¹

¹Universidade Federal de Viçosa

1

Works for me

dx.doi.org/10.17504/protocols.io.bfhvjj66

Neilier Junior

Universidade Federal de Viçosa

ABSTRACT

Sample preparation is crucial for successful biomolecule analysis. For this, the method must be individually chosen, based on the characteristics of the sample and the analyte. How some strategies can compromise the integrity of the molecule of interest. The dialysis D-tubes allow the concentration of samples with no precipitation by organic solvents or salts.

MATERIALS TEXT

D-Tubes Dialyzers

Milli-Q Water

1000 mL Beaker

Automatic micropipette

Floating rack

Plastic film

SAFETY WARNINGS

Wear personal protective equipment: gloves, lab coat and mask.

BEFORE STARTING

Organize your workspace

Make sure all solutions and equipment are available. Plan the experiment!

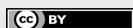
Material preparation

- 1 Choose the cutting mass (3.5 to 14 kDa) of the dialysis D-Tube based on the biomolecule to be purified.

Procedure

- 2 Complete the dialysis D-Tube with Milli-Q water and let it equilibrate for 15 min
- 3 Remove the water and weigh the dialysis tube

- 4 Add the sample with the aid of a pipette and weigh the tube again
 - 5 Prepare a beaker with 1000 mL of Milli-Q water (or exchange buffer) and a magnetic stir bar
 - 6 Place the dialysis tube on a floating rack and immerse the tube in the water in the beaker
 - 7 Cover the beaker with plastic film, start stirring and monitor the conductivity of the solution in the beaker. When the conductivity stops increasing, the concentrations between the sample and the solution are in equilibrium
- If conductivity is not controlled: 1 h of dialysis suffices to desalinate 3 M of ammonium sulfate in these conditions
- 8 Remove the dialysis tubes from the beaker and weigh the contents



This is an open access protocol distributed under the terms of the [Creative Commons Attribution License](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited