Version 2

Jul 16, 2020

Dialysis using D-Tubes V.2

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1 Works for me dx.doi.org/10.17504/protocols.io.bhqkj5uw

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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.

DOI

dx.doi.org/10.17504/protocols.io.bhqkj5uw

PROTOCOL CITATION

Neilier Junior 2020. Dialysis using D-Tubes. **protocols.io** dx.doi.org/10.17504/protocols.io.bhqkj5uw

KEYWORDS

Dialysis, Protein Purification, Proteomics, Sample Preparation, Desalination, Purification

CREATED

Jun 19, 2020

LAST MODIFIED

Jul 16, 2020

PROTOCOL INTEGER ID

38380

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

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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

Citation: Neilier Junior (07/16/2020). Dialysis using D-Tubes. https://dx.doi.org/10.17504/protocols.io.bhqkj5uw