Jun 21, 2024

# DESS (DMSO/EDTA/NACL) Protocol

DOI
**dx.doi.org/10.17504/protocols.io.5jyl822n9l2w/v1**

Mirayana Marcelino Barros[1], Tiago Pereira[2], Alejandro De Santiago Perez[1], Hunter Powell[3], Jenna Brown[4]

[1]University of Georgia; [2]Department of Marine Sciences, University of Georgia; [3]UGA; [4]University of Georgia- Holly Bik

Jenna Brown
University of Georgia- Holly Bik



**DOI: dx.doi.org/10.17504/protocols.io.5jyl822n9l2w/v1**

**Protocol Citation:** Mirayana Marcelino Barros, Tiago Pereira, Alejandro De Santiago Perez, Hunter Powell, Jenna Brown 2024. DESS (DMSO/EDTA/NACL) Protocol. **protocols.io https://dx.doi.org/10.17504/protocols.io.5jyl822n9l2w/v1**



**Protocol status:** Working
**We use this protocol and it's working**

**Created:** May 29, 2024

**Last Modified:** June 21, 2024

**Protocol Integer ID:** 100828

**Funders Acknowledgement:**
**Holly Bik**

## Abstract

DESS (DMSO/EDTA/NACL) protocol instructing how to make the solution for the preservation of samples.

## Make 2L stock solution of 0.5M EDTA; if stock is already made, proceed to step 4.

1 Combine 372.24 g **disodium EDTA** and 500 mL deionized water.
*Tip: Disodium EDTA is labeled PINK in the Bik Lab.*

2 Add enough **5M NaOH** to the solution to bring it to a pH of 8.0
*Tip: NaOH is labeled GREEN in the Bik Lab.*
*Tip: In some cases, this can be as much as 500 mL. The EDTA will begin to dissolve around a pH of* 7.0 *.*

3 Bring final volume to 2 L with deionized water once all disodium EDTA has dissolved.

## Prepare 2L DESS from 0.5M EDTA.

4 Combine 1 L **0.5M disodium EDTA**, 400 mL **Dimethyl Sulfoxide/DMSO**, and 600 mL **deionized water** in a 4000 mL Erlenmeyer flask.
*Tip: 0.5M disodium EDTA is labeled YELLOW and Dimethyl Sulfoxide/DMSO is labeled ORANGE in the Bik Lab.*

5 Put magnetic stir bars in the solution and place flask onto a hot plate. Turn the magnetic stirring function on and leave it at room temperature.

6 Add enough **NaCl** to saturate the solution: Add NaCl in 100g increments until 300g is reached, and then proceed to adding smaller amounts until salt is no longer dissolving. Solution should saturate with the addition of ~300-400g NaCl.
*Tip: NaCl is labeled RED in the Bik Lab.*
*Tip: This step can take hours: BE PATIENT. There may be leftover salt residue once the solution is fully saturated.*