

Ketterson / Nolan Research Group Collection

This document is part of a collection that serves two purposes. First it is a public archive for data and documents resulting from evolutionary, ecological, and behavioral research conducted by the Ketterson-Nolan research group. The focus of the research is an abundant North American songbird, the dark-eyed junco, *Junco hyemalis*, and the primary sources of support have been the National Science Foundation and Indiana University. The research was conducted in collaboration with numerous colleagues and students, and the objective of this site is to preserve not only the published products of the research, but also to document the organization and people that led to the published findings. Second it is a repository for the works of Val Nolan Jr., who studied songbirds in addition to the junco: in particular the prairie warbler, *Dendroica discolor*. This site was originally compiled and organized by Eric Snajdr, Nicole Gerlach, and Ellen Ketterson.

Context Statement

This document was generated as part of a long-term biological research project on a songbird, the dark-eyed junco, conducted by the Ketterson/Nolan research group at Indiana University. For more information, please see IUScholarWorks (<https://scholarworks.iu.edu/dspace/handle/2022/7911>).

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Longmire's Solution

Ingredients:

100mM Tris (Trizma Base), pH 8.0

100mM EDTA (Ethylenedinitrilo tetraacetic acid, disodium salt), pH 8.0

10mM NaCl

0.5% SDS (Sodium Dodecyl Sulfate)

0.2% sodium azide (prevents growth by biological contaminants. Poisonous)

Autoclaved dH₂O

To make 1 liter of solution combine:

100ml of 1M Tris

100ml of 1M EDTA

50ml of 10% SDS

2 ml of 5M NaCl (If 1M NaCl prepared, then use 10ml of 1M solution and adjust H₂O)

20ml of 10% sodium azide

728 ml of (autoclaved) dH₂O (or 720ml if using 1M NaCl)

its not necessary to autoclave, but you can

Stock solutions needed for Longmire's: (all dH₂O should be autoclaved first)

1M EDTA

= 372.2 g of EDTA diluted in 1000ml of dH₂O

This is the most difficult of all the solutions. To get the EDTA to dissolve you must add pellets of NaOH to a pH of 8.0. Be VERY CAREFUL when adding the NaOH. If you add too much and make the solution too basic it takes FOREVER to get your solution back to 8.0 (if you happen to go over you should add HCl until the proper pH is reached). The easiest way to do this: Put your EDTA and water mixture on a stir plate. Add a small amount of NaOH to your "solution" of water and EDTA, mix thoroughly (you may have to help the stir bar because this is a lot of EDTA). Take the pH of your mix. Then add increasingly smaller amounts all the while taking the pH. This is easier if you have a friend willing to hold the pH meter while you SLOWLY add NaOH.

1M NaCl

= 58.44g of NaCl diluted in 1000ml of dH₂O

10% sodium azide *bad stuff!*
= 10g sodium azide in 100ml dH₂O * WEAR MASK, GLOVES + LAB COAT.

10% SDS

= 10g of electrophoresis-grade SDS in 100ml of deionized H₂O

Add SDS a few grams at a time to facilitate dissolving. SDS the same as sodium lauryl sulfate. *Wear a mask... SDS will make your lungs hurt and you will be coughing all day long.*

1M Tris, pH 8.0

= 121.1g of Tris dissolved in 800ml of H₂O.

Adjust the pH to 8.0 by addition 42 ml of 11.6M HCl. Allow the solution to cool to room temp before making final adjustments to pH and then add H₂O to make 1000ml. If solution has a yellow color, discard and get better quality Tris.