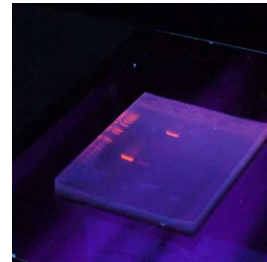


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## 🌐 LAB Agarose Gel Electrophoresis Buffer Recipe

DOI

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**Protocol status:** Working

**We use this protocol in an introductory molecular cell biology lab course and it's working.**

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## Abstract

A recipe to make lithium acetate / borate agarose gel electrophoresis buffer. This buffer has a lower ionic strength than TAE, but maintains its ability to resolve both small and large bands.

Additionally, it is MUCH less expensive, and if you are short on time (like in a lab course!) you can run the gel at a higher voltage.

From <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0011318> via <https://bitesizebio.com/25078/faster-even-cooler-dna-gels/>

## Image Attribution

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## Guidelines

Use good laboratory practices for measuring weights and volumes.

## Materials

⊗ Lithium Acetate Dihydrate **Merck MilliporeSigma (Sigma-Aldrich) Catalog #L4158**

⊗ Boric acid **Fisher Scientific Catalog #BP1681**

⊗ Paper pH Strips **Thermo Fisher Scientific Catalog #13-640-508**

## Protocol materials

 Boric acid **Fisher Scientific Catalog #BP1681**

 Paper pH Strips **Thermo Fisher Scientific Catalog #13-640-508**

 Lithium Acetate Dihydrate **Merck MilliporeSigma (Sigma-Aldrich) Catalog #L4158**

## Safety warnings

 Lithium acetate: May cause eye and skin irritation. May cause respiratory and digestive tract irritation. The toxicological properties of this material have not been fully investigated.

Boric acid: May damage fertility. May damage the unborn child.

Wear appropriate personal protective equipment (PPE), including a lab coat, nitrile gloves and safety glasses.



## 25X Buffer Concentrate

- 1 Weigh out   
☐ Lithium Acetate Dihydrate **Merck MilliporeSigma (Sigma-Aldrich) Catalog #L4158**
- Note

Make *sure* it's the dihydrate, not anhydrous lithium acetate! If you're using anhydrous, weigh out  instead.
- 2 Weigh out  ☐ Boric acid **Fisher Scientific Catalog #BP1681** .
- 3 Mix the lithium acetate and boric acid with deionized water to a final volume of
- 4 Pipette a small amount onto a ☐ Paper pH Strips **Thermo Fisher Scientific Catalog #13-640-508** . Make sure the pH is between 6.5 and 7.0.

## 1X Buffer

- 5 Dilute  of 25X stock solution with  deionized H<sub>2</sub>O. Mix well.