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# Recipe for 50x TAE buffer

Forked from Recipe for 50x TAE buffer

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**Protocol status:** In development
**We are still developing and optimizing this protocol**

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## Abstract

Stock solution for 50x TAE. TAE buffer is a solution made up of Tris base, acetic acid and EDTA (Tris-acetate-EDTA). It is a common buffer for DNA separation using standard agarose gel electrophoresis.

## Materials

MATERIALS

- EDTA
- Acetic acid, glacial **Sigma Aldrich Catalog #**537020
- Tris (Tris Base) **Gold Biotechnology Catalog #**T-400

## Components required

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| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| | | **Component** | mass | VOLUME | **Molarity in 50x** | Final in 1x | **Molecular weight** |
| | 1 | EDTA disodium salt | 93.05 g | | 50 mM | 1 mM | 372.24 g/mol |
| | na | Dissolve | 400 mL | 100 mL | pH = 8.0 | | |
| | | AUTOCLAVE | | | | | |
| | 2 | Tris-base | 242 g | | 2 M | 40 mM | 121.14 g/mol |
| | na | Dissolve | 700 mL | 700 mL | | | |
| | 3 | glacial / acetic acid | | 57.1 mL | 1 M | 20 mM | 60.05 |

## Preparation of a 0.5 M EDTA stock solution

2 For 500 ml:

- weigh out 93.05 grams of EDTA disodium salt (MW=372.24 g/mol)
- Dissolve in 400 milliliter deionized water and adjust the pH with solid sodium hydroxide (NaOH) plates, EDTA will not go completely into solution until the pH is adjusted to about 8.0!
- Top up the solution to a final volume of 500 milliliters
- autoclave

## Preparation of 50 x TAE buffer

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- weigh out 242 grams of Tris-base (MW = 121.14 g/mol) and dissolve in approximately 700 milliliters of deionized water
- Carefully add 57.1 milliliters of 100 % glacial acid (or acetic acid) and 100 milliliters of 0.5 M EDTA (pH 8.0)
- adjust the solution to a final volume of 1 liter
- the pH of this buffer is not adjusted and should be about 8.5
- store stock solution at room temperature

## Preparation of 1 x TAE working solutuion

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20 mL 50 x TAE
add 920 mL DI $H_2O$

final concentration in gel / running buffer: 40 mM Tris, 20 mM acetic acid, 1 mM EDTA