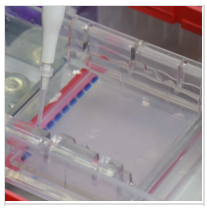

Jul 05, 2022

Physical property-Stability and pH (TBE and Borax Agarose electrophoresis buffer)

In 1 collection

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ABSTRACT

The pH check is important because changes in the pH might affect mobility of DNA in the agarose gel hence PCR result alteration and misinterpretation.
The physical stability of the electrophoresis buffer is important because if the powder absorbs moisture from air overtime, they might not be very efficient in allowing migration of DNA samples in the gel which could affect the PCR results.
This protocol describes how to access the physical property of TBE and Borax electrophoresis buffers.

PROTOCOL CITATION

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COLLECTIONS

Beneficial Bio: Quality control tests

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Beneficial Bio: Quality control tests

GUIDELINES

Quality control tests are important to ensure the reagents are functioning properly. In this procedure we describe how to access the physical stability and pH of Agarose electrophoresis buffer as this might affect the migration of DNA sample in an Agarose gel electrophoresis.

MATERIALS TEXT

Materials and Reagents

- Individual buffer powder components (Tris **Roche** , Borax **Contributed by users** , Na2EDTA **Sigma – Aldrich**)
- Borax **Contributed by users** powder
- weighing balance, weighing boat and spatula
- zip lock bags
- Silica gel beads
- Desiccator
- pH meter
- Distilled water

SAFETY WARNINGS

The procedure is generally safe but ensure to follow all standard lab safety rules in measuring and handling powders to avoid any dust inhalation.

BEFORE STARTING

Ensure all preliminary steps involved in the process are performed (e.g initially weighing and drying buffer powders)

Confirming Stability and pH

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The stability test is adopted to test Electrophoresis buffers by confirming the net weight

of the dry powder to show it does not absorb moisture from the air after storage and the pH of the buffer solution upon dissolution of the buffer powder

To confirm the weight of the powder buffer sachet:

1. Weigh the individual powder components that constitute the buffer (*the individual powders could be pre-dried if necessary in an incubator with silica gel beads at* **37 °C**)
2. Put them together in a beaker and mix.
3. Pour the powder mix in a zip lock sachet and store in an air tight container for 1 to 3 days.
4. After, open the sachets and pour the powder into a weighing boat and measure the weight of the dried powder.
5. The weight should be approximately close to or equal to the weight of the powder before the 3 days storage.

To confirm the pH of the buffer solution:

1. Pour the powder buffer into an appropriate size beaker and add the appropriate amount of distilled water as indicated on the powder sachet (e.g 1 sachet in 1L water).
2. Mix until a clear solution is obtained
3. Use a pH meter to check the pH of the solution which should be between 8.3 and 8.5.