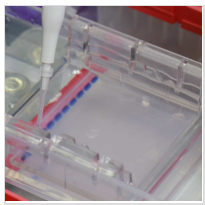

Version 2

Jul 28, 2022

Physical property-Stability and pH (TBE and Borax Agarose electrophoresis buffer) V.2

In 1 collection

Stephane Fadanka[1], Nadine Mowoh[1], Shalo Minette[1]

[1]Beneficial Bio, Mboalab

1 *Works for me* Share

dx.doi.org/10.17504/protocols.io.kxygxz8j4v8j/v2

Low-cost, high-quality ...

Nadine Mowoh

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 assess the physical property of TBE and Borax electrophoresis buffers.

DOI

dx.doi.org/10.17504/protocols.io.kxygxz8j4v8j/v2

PROTOCOL CITATION

Stephane Fadanka, Nadine Mowoh, Shalo Minette 2022. Physical property-Stability and pH (TBE and Borax Agarose electrophoresis buffer). **protocols.io** https://dx.doi.org/10.17504/protocols.io.kxygxz8j4v8j/v2
Version created by Nadine Mowoh

COLLECTIONS

Beneficial Bio: Quality control tests

KEYWORDS

Stability of agarose electrophoresis buffer, Quality control of agarose electrophoresis buffer

CREATED

Jul 28, 2022

LAST MODIFIED

Jul 28, 2022

PROTOCOL INTEGER ID

67816

PARENT PROTOCOLS

Part of collection

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 assess 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.

Citation: Stephane Fadanka, Nadine Mowoh, Shalo Minette Physical property-Stability and pH (TBE and Borax Agarose electrophoresis buffer) https://dx.doi.org/10.17504/protocols.io.kxygxz8j4v8j/v2

BEFORE STARTING

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

Confirming Stability and pH

1

The stability test is adopted to test Electrophoresis buffers by confirming the net weight of the dry powder to show that it does not absorb moisture from the air after storage and measure the pH of the buffer solution upon dissolution of the buffer powder

To confirm the weight of the TBE powder buffer sachet:

1. Weigh the individual buffer components that would make 500 mL of the 10x buffer as indicated in the table below (*the individual powders could be pre-dried if necessary in an incubator with silica gel beads at* **37 °C**).

A	B
Component	**Amount in grams (g)**
Borax	27.515
Tris	53.905
EDTA	3.72

Table 1

1. Put them together in a beaker and mix.
2. Pour the powder mix in a zip lock sachet and store in an air tight container for 1 to 3 days.
3. After, open the sachets and pour the powder into a weighing boat and measure the weight of the dried powder.
4. 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 500 mL distilled 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.

Citation: Stephane Fadanka, Nadine Mowoh, Shalo Minette Physical property-Stability and pH (TBE and Borax Agarose electrophoresis buffer) https://dx.doi.org/10.17504/protocols.io.kxygxz8j4v8j/v2