Universal DNA Extraction Buffer

Catalog #627

EXCITE | EXPLORE | ENGAGE

Storage:
Store at room temperature.

Universal DNA Extraction Buffer

for 50 extractions

EXTRACTION PROCEDURE

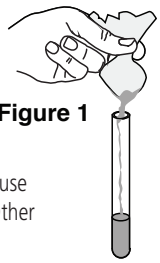

Figure 1

Select onions or other plant tissue that is very fresh. The onion tissue can be soaked in cold water to hydrate if necessary. Fresh green onions, also referred to as spring onions or scallions, are an excellent choice of material to use because they are usually harvested and quickly shipped to the grocery store. Other suggestions to try are bananas, tomatoes, and garlic.

1. Carefully slice a small section (3-5 g) of onion tissue from the main body of the onion (not the root tip), and place in a test tube. A mortar and pestle can also be used to grind the tissue.

2. Pipet 3 ml of DNA Extraction Buffer into the tube or mortar. Mince and grind the tissue with the eraser of a pencil or other appropriate instrument. This releases the cellular contents, including the DNA, from the onion cells.

3. Place a square of cheese cloth or coffee filter into a funnel and filter the contents into a clean tube (squeeze out the excess juice) or use a transfer pipet to remove the liquid portion with minimal carry-over of onion tissue (Figure1). Measure approximately 2 ml of liquid.

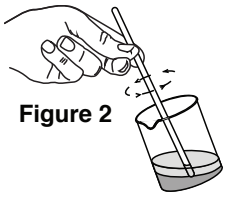

Figure 2

4. Carefully overlay the liquid with 2 ml of ice cold 95-100% Isopropanol. Alternatively, use 4 ml of 70% clear Isopropyl Alcohol.

5. Place a glass rod into the test tube and twirl it at the interface of the two liquids (Figure 2). The DNA should begin to spool (wrap) around the glass rod. A pasteur pipet which has been heated to melt the end and form a hook also works well for spooling. Gently lift the glass rod out of the solution periodically to observe the DNA material attached.

6. After spooling for a minute or two, remove the glass rod from the test tube. The DNA will appear as a viscous, gelatinous-like substance adhering to the glass.

7. Rinse the DNA on the glass rod with 95% Ethanol and allow it to dry for several minutes.

8. The DNA on the glass rod can be stained with 1x Methylene Blue Plus[a], or it can be rehydrated in 1 ml of 1x TE buffer by placing the glass rod into a 1.5 ml microcentrifuge tube containing TE. Stir the glass rod in the TE to release the DNA.

LABORATORY EXTENSION ACTIVITY

The resuspended DNA can be electrophoresed on an agarose gel and visualized by staining. To prepare a sample for electrophoresis:

1. Transfer 0.1 ml of DNA solution* to a fresh 13 x 100 mm test tube. Do not worry about the undissolved DNA.

2. With a pasteur pipet, add 2 drops of 10x Gel Loading Solution (Cat. #606 is recommended). Mix.

3. The sample is ready to be applied to a 0.8% agarose gel. You may also wish to include a standard DNA marker (Cat. #750 is recommended).

4. Use conditions recommended by manufacturer for the electrophoretic separation.

5. To visualize DNA after electrophoresis, stain with EDVOTEK DNA Blue InstaStain[a] (Cat. #2003).

* Chromosomal DNA from onion or other plant tissue extracted by this method is not suitable for restriction enzyme digestion.

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