Genomic DNA Maxi Kit (Plant) Quick Protocol

For research use only

Catalogue Number

GPM002, GPM010, GPM025

Instruction Manual Download

When using this product for the first time, or if you are unfamiliar with the procedure, please scan the QR code and download the complete instruction manual.

Instruction Manual Download

IMPORTANT BEFORE USE!

1. Add isopropanol (see the bottle label for volume) to GP3 Buffer then mix by shaking for a few seconds. Check the box on the bottle. Be sure and close the bottle tightly after each use to avoid isopropanol evaporation.

2. Add absolute ethanol (see the bottle label for volume) to Wash Buffer then mix by shaking for a few seconds. Check the box on the bottle. Be sure and close the bottle tightly after each use to avoid ethanol evaporation.

1. Plant Tissue Dissociation

Cut off 0.5 g (up to 1 g) of fresh or frozen plant tissue or 100 mg (up to 250 mg) of dry plant tissue. Homogenize the sample using one of the following methods: **A**. Add liquid nitrogen to a mortar and grind the plant tissue thoroughly using a pestle. Refill the mortar occasionally with liquid nitrogen to ensure the sample remains frozen. Transfer the plant tissue powder to a 15 ml centrifuge tube. **B**. Transfer the sample and 4-5 steel beads (7 mm) to a 15 ml centrifuge tube. Freeze the centrifuge tube with liquid nitrogen, vortex for 20-30 seconds and repeat until the sample becomes a fine powder. Remove the steal beads with a magnet.

2. Lysis

Use GP1 Buffer for lysis of common plant species or GPX1 Buffer for lysis of plants with a high polysaccharide content.

GP1 Buffer: Add **4 ml of GP1 Buffer** and **50 µl of RNase A** into the sample tube and vortex.

NOTE: DO NOT mix GP1 Buffer and RNase A before use.

Incubate at 65ºC for 20 minutes. During incubation, invert the tube every 5 minutes. At this time, preheat the required volume of Elution Buffer (2 ml per sample) to 65ºC (for step 6 DNA Elution). Add 1 ml of GP2 Buffer to the sample lysate, mix by vortex and incubate on ice for 5 minutes. Proceed with step 3 filtration.

GPX1 Buffer: Add **5 ml of GPX1 Buffer** and **50 µl of RNase A** into the sample tube and vortex.

NOTE: DO NOT mix GPX1 Buffer and RNase A before use.

Incubate at 65ºC for 20 minutes. During incubation, invert the tube every 5 minutes. At this time, preheat the required volume of Elution Buffer (2 ml per sample) to 65ºC (for step 6 DNA Elution). Proceed with step 3 filtration.

3. Filtration

Place a **Filter Column** in a 50 ml centrifuge tube. Transfer the sample mixture to the **Filter Column** and centrifuge at 3,000 x g for 5 minutes.

NOTE: Following centrifugation, if some of the sample mixture has not passed through the Filter Column, increase the centrifuge time until all of the sample mixture passes through completely.

Discard the **Filter Column** and carefully transfer the flow-through to a new 50 ml centrifuge tube.

NOTE: If a pellet has formed in the flow-through, carefully transfer the supernatant to a new 50 ml centrifuge tube without disturbing the pellet.

4. DNA Binding

Add a **1.5 volume of GP3 Buffer (make sure isopropanol was added)** to the lysate and vortex immediately for 10 seconds (e.g. add 7.5 ml of GP3 Buffer to 5 ml of lysate).

NOTE: If precipitate appears, break it up as much as possible with a pipette

Transfer the sample mixture (including any precipitate) to the **GD Maxi Column in Collection Tube**. Centrifuge at 3,000 x g for 5 minutes. Discard the flow-through then place the **GD Maxi Column** back in the **Collection Tube**.

5. Wash

Add **4 ml of W1 Buffer** into the **GD Maxi Column** then centrifuge at 3,000 x g for 3 minutes. Discard the flow-through and place the **GD Maxi Column** back in the **Collection Tube**. Add **6 ml of Wash Buffer (make sure ethanol was added)** into the **GD Maxi Column** then centrifuge at 3,000 x g for 3 minutes. Discard the flow-through and place the **GD Maxi Column** back in the **Collection Tube** then centrifuge at 3,000 x g for 10 minutes to dry the column matrix.

Optional Residual Pigment Removal Step

If pigments remain on the column matrix, perform this optional step.

Following Wash Buffer addition, add 4 ml of absolute ethanol into the **GD Maxi Column** then centrifuge at 3,000 x g for 5 minutes. Discard the flow-through then place the **GD Maxi Column** back in the **Collection Tube**. Centrifuge again for 10 minutes at 3,000 x g to dry the column matrix.

6. Elution

Transfer the dried **GD Maxi Column** to a new **Collection Tube**. Add **1 ml of preheated Elution Buffer, TE Buffer or water** into the center of the column matrix. Let stand for 5 minutes or until the Elution Buffer, TE Buffer or water is absorbed by the matrix. Centrifuge at 3,000 x g for 3 minutes to elute purified DNA.

Components

Component	GPM002	GPM010	GPM025
GP1 Buffer	10 ml	50 ml	125 ml
GPX1 Buffer	10 ml	50 ml	125 ml
GP2 Buffer	3 ml	15 ml	30 ml
GP3 Buffer[1] (Add Isopropanol)	8 ml (16 ml)	30 ml (60 ml)	70 ml (140 ml)
W1 Buffer	10 ml	45 ml	130 ml
Wash Buffer[2] (Add Ethanol)	5 ml (20 ml)	25 ml (100 ml)	50 ml (200 ml)
Elution Buffer	6 ml	30 ml	60 ml
RNase A (10 mg/ml)	100 µl	550 µl	650 µl x 2
Filter Columns	2	10	25
GD Maxi Columns in Collection Tube	2	10	25
Collection Tube with Cap	2	10	25

[1]Add isopropanol (see the bottle label for volume) to GP3 Buffer then mix by shaking for a few seconds. Check the box on the bottle. Be sure and close the bottle tightly after each use to avoid isopropanol evaporation.

[2]Add absolute ethanol (see the bottle label for volume) to Wash Buffer then mix by shaking for a few seconds. Check the box on the bottle. Be sure and close the bottle tightly after each use to avoid ethanol evaporation.

Storage

Dry at room temperature (15-25ºC)