

Appendix : Optional RNase A Treatment for GDP305 Plant Genomic DNA Extraction

* This document is an appendix to the Tiangen Plant Genomic DNA Kit (Cat. No. GDP305) handbook. It provides a self-contained, optional procedure for RNA removal that may be applied when RNA-reduced genomic DNA is required. This appendix does not modify or replace the manufacturer's protocol unless explicitly invoked by the user.

Purpose of This Appendix

The standard GDP305 protocol does not include an RNA removal step. This appendix documents an optional RNase A treatment that can be applied to reduce RNA carryover prior to organic extraction, while preserving genomic DNA integrity.

Applicability

This appendix may be applied when downstream applications require reduced RNA content (e.g., accurate DNA quantification or RNA-sensitive enzymatic reactions). For routine PCR or qPCR applications, this appendix is generally not required.

Additional Reagent Required (Not Supplied with Kit)

RNase A, DNase-free, molecular biology grade, 10 mg/mL stock solution

Procedure: RNase A Treatment

- A1. Following completion of GDP305 Protocol Step 2 (Page 3), maintain the lysate at 65 °C.
- A2. Add DNase-free RNase A directly to the lysate to achieve a final concentration of 20–50 µg/mL (e.g., add 1–2 µL of 10 mg/mL RNase A to approximately 400 µL lysate).
- A3. Mix gently by inversion or brief vortexing to ensure homogeneous distribution.
- A4. Incubate at 65 °C for an additional 10–20 minutes to allow RNA digestion.
- A5. Immediately proceed to GDP305 Protocol Step 3 (Page 3) for chloroform extraction.

Notes

1. Use only DNase-free RNase A to prevent degradation of genomic DNA.
2. This appendix operates exclusively between GDP305 Protocol Steps 2 and 3 and does not affect column binding, washing, or elution steps.
3. If used routinely, this appendix should be referenced in the laboratory's master SOP.
4. Verification of RNA reduction (e.g., gel electrophoresis or spectrophotometric ratios) is recommended when method documentation is required.

Expected Outcome

Application of this appendix will reduce RNA carryover in the final genomic DNA preparation, resulting in improved DNA purity metrics while maintaining DNA yield and integrity.

For Research Use Only. Not for use in diagnostic procedures