RNA Isolation from Plant Tissue

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**ABSTRACT**

**Methods for RNA isolation**

These methods were originally included in Appendix S1 of "Evaluating Methods for Isolating Total RNA and Predicting the Success of Sequencing Phylogenetically Diverse Plant Transcripts" Marc T. J. Johnson et al. PLOS ONE, November 21, 2012. [https://doi.org/10.1371/journal.pone.0050226](https://doi.org/10.1371/journal.pone.0050226)

Many of the protocols share elements or combine components from several methods. For each method, we describe the reagents and procedures used, and identify the researchers or institute that implemented the protocol.

Due to the potential for contamination and degradation by RNase enzymes, as well as health concerns in handling some substances and chemicals, best practices in aseptic wet lab techniques must be practiced at all times during RNA isolation. Chief among these is the critical need to avoid contamination of samples by using extreme care when moving liquids and opening and closing tubes to avoid aerosols. Because of the risk of degradation by RNase enzymes, it is essential to use sterile RNase-free equipment, disposable plastics and solutions. RNase degradation and contamination can be avoided by keeping samples constantly frozen at low temperature (≤ -80 °C) prior to adding buffers that denature or immobilize RNase. Treating equipment with RNase denaturants (e.g. RNase Zap, Ambion, Austin, TX) and solutions with diethylpyrocarbonate (DEPC) can also prevent contamination and/or degradation of samples, but it can have some negative effects on samples. 1 Many additional helpful tips for successful RNA isolation are available in Sambrook and Russell 1 and in Appendix A of Qiagen’s RNeasy Mini Handbook downloadable from www.qiagen.com.

SAFETY WARNINGS

Please see SDS (Safety Data Sheet) for hazards and safety warnings.

ABSTRACT


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ATTACHMENTS

journal.pone.0050226.s0
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FILES

RNA Isolation from Plant Tissue Protocol 1: Qiagen RNeasy Plant Mini Kit
Version 1
by Eric Carpenter

RNA Isolation from Plant Tissue Protocol 2: McKenzie et al's Qiagen hybrid method
Version 1
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RNA Isolation from Plant Tissue Protocol 3: CTAB-PVP Method
Version 1
by Eric Carpenter

RNA Isolation from Plant Tissue Protocol 4: CTAB-PVP-TRizol Method
Version 1
by Eric Carpenter

RNA Isolation from Plant Tissue Protocol 5: pBIOZOL Method
Version 1
by Eric Carpenter


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RNA Isolation from Plant Tissue Protocol 18: innuPREP Plant RNA Kit
Version 1
by Eric Carpenter


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