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Protocol status: Working
 These protocols were used for RNA extraction from plant tissues in order to support the One Thousand Plants initiative's work to produce RNA-Seq transcriptomes from a diverse collection of plant samples.

Created: Jun 29, 2019

Last Modified: Aug 22, 2019

PROTOCOL integer ID:
 25317

RNA Isolation from Plant Tissue Protocol 11: Tri Reagent Method

In 1 collection

GigaScience Press

Eric Carpenter

ABSTRACT

Implemented by: Michael Melkonian and Barbara Surek

The protocol for RNA isolation using [TRI Reagent](#) (Molecular Research Center, Cincinnati OH) is analogous to the TRIzol LS Reagent protocol except that 1 ml of TRI Reagent is added to each 250 µl of homogenized material (= approx. 50–100 mg packed cell volume) (step 3, [Protocol 10](#)).

For background, TRI Reagent combines phenol and guanidine thiocyanate in a monophasic solution to inhibit RNase activity during RNA isolation.

This protocol is part of a collection of eighteen protocols used to isolate total RNA from plant tissue. (RNA Isolation from Plant Tissue Collection: <https://www.protocols.io/view/rna-isolation-from-plant-tissue-439gyr6>)

ATTACHMENTS

[journal.pone.0050226.s01](#)
 1.PDF

Keywords: RNA, RNA isolation, RNA extraction, plant tissue

GUIDELINES

In cases of high RNA concentration ($> 1000 \text{ ng}/\mu\text{l}$), but low 260/230 ratio (less than 1), RNA can be extracted and precipitated again.

For this, steps 8–13 of the TRIzol LS Reagent Method are repeated.

Protocol

NAME

Protocol 10: TRIzol LS Reagent Method

CREATED BY

Julia Roßmanith

PREVIEW

The RNA phase is mixed with **500 μL** **8 M LiCl** by vortexing and incubating for **01:00:00** at **4 $^{\circ}\text{C}$** . Subsequently, steps 16–23 of the TRIzol LS Reagent protocol are performed.

Frequently, repetition of extraction decreases previous RNA concentrations up to tenfold, but increases the 260/230 ratio remarkably attaining values of 1.8 or more.

Neither using isopropanol for the second precipitation process nor replacing isopropanol by LiCl as a main precipitator is as efficient as the method described above.

MATERIALS

MATERIALS

TRI Reagent® Molecular Research Center, Inc.

SAFETY WARNINGS

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