

## Plant Extracellular Vesicles Contain Diverse Small RNA Species and Are Enriched in 10 to 17 Nucleotide "Tiny" RNAs

Patricia Baldrich, Brian D. Rutter, Hana Zand Karimi, Ram Podicheti, Blake C. Meyers, and Roger W. Innes

*Plant Cell. Advance Publication Jan. 31, 2019; doi: 10.1105/tpc.18.00872*

Corresponding authors: Blake C. Meyers, [BMeyers@danforthcenter.org](mailto:BMeyers@danforthcenter.org) and Roger W. Innes, [rinnes@indiana.edu](mailto:rinnes@indiana.edu)

### Review timeline:

<b>TPC2018-00872-BR</b>	Submission received:	Nov. 14, 2018
	1 <sup>st</sup> Decision:	Dec. 21, 2018 <i>accept with minor revisions</i>
<b>TPC2018-00872-BRR1</b>	1 <sup>st</sup> Revision received:	Jan. 11, 2019
	2 <sup>nd</sup> Decision:	Jan. 16, 2019 <i>acceptance pending, sent to science editor</i>
	Final acceptance:	Jan. 31, 2019
	Advance publication:	Jan. 31, 2019

**REPORT:** (The report shows the major requests for revision and author responses. Minor comments for revision and miscellaneous correspondence are not included. The original format may not be reflected in this compilation, but the reviewer comments and author responses are not edited, except to correct minor typographical or spelling errors that could be a source of ambiguity.)

---

**TPC2018-00872-BR 1<sup>st</sup> Editorial decision – *accept with minor revisions* Dec. 21, 2018**

---

We have received reviews of your manuscript entitled "Plant Extracellular Vesicles Contain Diverse Small RNA Species and Are Enriched in 10 to 17 Nucleotide "Tiny" RNAs." On the basis of the advice received, the board of reviewing editors would like to accept your manuscript for publication in *The Plant Cell*. This acceptance is contingent on revision based on the comments of our reviewers. In particular, please consider the following:

All three reviewers found this report to be of high quality and well written. Likewise, they agreed that this report represents an exciting new area of research that raises many questions about the role of these small RNAs in plant biology and suggests new lines of inquiry. As you will see from the comments, there are no major concerns regarding the manuscript. However, Reviewers 1 and 3 have brought up some minor points regarding the writing and I would request that you address these.

----- Reviewer comments:

[Reviewer comments shown below along with author responses]

---

**TPC2018-00872-BRR1 1<sup>st</sup> Revision received Jan. 11, 2019**

---

Reviewer comments and **author responses:**

**We thank the reviewers and editors for their positive evaluations of our manuscript, and especially for catching errors in our presentation. We have corrected all errors, and revised the text where suggested. We have uploaded a revised version of the text with the changes highlighted. We have also modified the figures and tables as recommended by the editors to improve their clarity. We thank the editors very much for these suggestions. Below we have provided specific responses to each reviewer suggestion.**

Reviewer #1:

- Abstract: I would move the sentence "We found that specific miRNAs and siRNAs are preferentially loaded into plant EVs" (l36) after the ones related to the tyRNAs as the latter is the best characterised finding of the manuscript.

**We tried moving this sentence, but found it did not accomplish the goal of putting more emphasis on the tyRNA results. We think the original sentence order actually gives the tyRNA findings more emphasis, thus have left the sentence order as is.**

- Results, l151-152: the second half of the sentence "Together, these observations strongly suggest that EVs are highly enriched for tyRNAs and that this new RNA category might correspond to specific degradation products of sRNA precursors" is not fully supported by what was presented before. It could be removed and the next section start as is.

**We have removed this sentence.**

- Results, Fig2: the panels 2C and 2D do not correspond to their call in the text (e.g. l175 & l194); they are swapped.  
- Results: Fig4: l268, The reference to Fig4C does not correspond; either refer to 4B or create a panel 4D.

**These errors have been corrected. With regards to the Figure 2 panels, we corrected the text. Because the text reference to Figs 2C and 2D were swapped, we changed the paragraph order so that 2C is now discussed prior to 2D. With regards to Figure 4, the reference in the text should have been to panel B, not panel C. We have corrected the text.**

Reviewer #2:

No changes suggested.

Reviewer #3:

There is a minor issue, which doesn't affect the main message:

Lines 186-188 "When HEN1 is absent, sRNAs undergo an uridylation process that allows exonucleases encoded by SDN1 (SMALL RNA DEGRADING NUCLEASE) and SDN2 to degrade them." There are two lines of evidence that SDNs do not degrade U tailed miRNAs but miRNAs before tailing.

**We have replaced this sentence with "When HEN1 is absent, sRNAs undergo an uridylation process that may promote the process of RNA decay. More typically, and in wild-type plants, sRNAs are degraded by exonucleases encoded by SDN1 (SMALL RNA DEGRADING NUCLEASE) and SDN2."**

---

**TPC2018-00872-BRR1 2<sup>nd</sup> Editorial decision – acceptance pending**

**Jan. 16, 2019**

We are pleased to inform you that your paper entitled "Plant Extracellular Vesicles Contain Diverse Small RNA Species and Are Enriched in 10 to 17 Nucleotide "Tiny" RNAs" has been accepted for publication in The Plant Cell, pending a final minor editorial review by journal staff. At this stage, your manuscript will be evaluated by a Science Editor with respect to scientific content presentation, compliance with journal policies, and presentation for a broad readership.

---

**Final acceptance from Science Editor**

**Jan. 31, 2019**

---