# Article information:

Profiling of phytohormone-specific microRNAs and characterization of the miR160-ARF1 module involved in glandular trichome development and artemisinin biosynthesis in Artemisia annua - PubMed  
<https://pubmed.ncbi.nlm.nih.gov/36478140/>

# Article summary:

1. This article profiles phytohormone-specific microRNAs and characterizes the miR160-ARF1 module involved in glandular trichome development and artemisinin biosynthesis in Artemisia annua.

2. A comprehensive resource was generated for identifying key miRNA-target circuits involved in the phytohormone-induced process of artemisinin biosynthesis in A. annua, including 151 conserved and 52 novel miRNAs and their 4132 targets.

3. The results reveal the intrinsic link between the miR160-ARF1 module and artemisinin biosynthesis, which may expedite the innovation of metabolic engineering approaches for high and stable production of artemisinin in the future.

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

This article is a well-researched piece that provides a comprehensive overview of the role of microRNAs (miRNAs) in regulating artemisinin biosynthesis in Artemisia annua. The authors have conducted an extensive analysis of transcriptomics, small RNAs, and degradome data to generate a comprehensive resource for identifying key miRNA-target circuits involved in this process. Furthermore, they have identified miR160 as a potential regulator of glandular trichome development and artemisinin biosynthesis, which is further confirmed by RNA ligase-mediated 5' RACE and transient transformation assays.

The article is written clearly with sufficient detail to support its claims, making it easy to understand even for readers who are not experts on this topic. The authors have provided evidence to support their conclusions, such as qRT‐PCR data to confirm expression levels of selected miRNAs, fluorescence microscopy images to show density of trichomes in leaves from transgenic plants, etc., making it reliable overall.

The only potential bias that could be noted is that the authors do not discuss any possible risks associated with manipulating gene expression levels or other aspects related to metabolic engineering approaches for high production of artemisinin. However, this does not significantly detract from the reliability or trustworthiness of the article overall.

# Topics for further research:

* Metabolic engineering approaches for artemisinin production
* Risks associated with gene expression manipulation
* Regulation of artemisinin biosynthesis
* miRNA-target circuits in Artemisia annua
* RNA ligase-mediated 5' RACE
* Transient transformation assays

# Report location:

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