# Article information:

Reconstitution of monoterpene indole alkaloid biosynthesis in genome engineered Nicotiana benthamiana | Communications Biology
<https://www.nature.com/articles/s42003-022-03904-w>

# Article summary:

1. Synthetic biology approaches have enabled advances in the control and expression of biosynthetic pathways, allowing plants to be used as an alternative biochemical production chassis.

2. Monoterpene indole alkaloids (MIAs) are a large group of plant-produced natural products with many medicinal uses, but they are present in low concentrations in their native plant hosts.

3. This study successfully engineered de novo production of strictosidine in N. benthamiana, demonstrating the potential of this species as a bioproduction chassis for small molecules.

# 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:

The article is generally reliable and trustworthy, providing evidence for its claims and exploring counterarguments where appropriate. The authors provide a comprehensive overview of the current state of research into monoterpene indole alkaloid (MIA) production, highlighting the challenges associated with producing these compounds from their native plant hosts and discussing the potential benefits of using synthetic biology approaches to engineer alternative production systems. The authors also discuss the potential risks associated with engineering plants for MIA production, such as unintended side product formation due to off-target activities of endogenous enzymes, and suggest strategies to mitigate these risks.

The article does not appear to be biased or one-sided; it presents both sides equally and explores counterarguments where appropriate. It does not contain any promotional content or partiality towards any particular viewpoint or approach. All claims made by the authors are supported by evidence from previous studies, and all points of consideration are explored thoroughly. The only potential issue is that some relevant studies may have been omitted from the discussion; however, this does not detract from the overall reliability and trustworthiness of the article.

# Topics for further research:

* Synthetic biology approaches for monoterpene indole alkaloid production
* Plant engineering for monoterpene indole alkaloid production
* Unintended side product formation in monoterpene indole alkaloid production
* Strategies to mitigate risks in monoterpene indole alkaloid production
* Challenges associated with monoterpene indole alkaloid production
* Potential benefits of monoterpene indole alkaloid production

# Report location:

<https://www.fullpicture.app/item/b7c4a0e6436a723f64798e86d0fd38f6>