# Article information:

A five-transgene cassette confers broad-spectrum resistance to a fungal rust pathogen in wheat | Nature Biotechnology  
<https://www.nature.com/articles/s41587-020-00770-x>

# Article summary:

1. Wheat rust pathogen MainPgt continues to overcome resistant wheat cultivars, with three highly virulent isolates emerging in the last 20 years.

2. Combining all-stage resistance (ASR) genes and adult plant resistance (APR) genes provides the most durable resistance against Pgt, a fungal rust pathogen that affects wheat crops.

3. A transgene cassette of four ASR genes (Sr22, Sr35, Sr45 and Sr50), combined with the APR gene Sr55, has been introduced into bread wheat as a single locus using a reiterative Gateway recombinase cloning strategy that uses excisable lacZ selection for large-construct generation.

# Article rating:

Appears strongly imbalanced: The article is written in a biased or one-sided way, and the information it provides is not trustworthy enough to be considered a reliable source. You should consult other sources to find reliable information on the presented issues.

# Article analysis:

该文章主要介绍了一种将多个抗病基因组合成一个转基因卡式的方法，以提高小麦对锈菌病的抵抗力。然而，该文章存在以下问题：

1. 偏袒转基因技术：该文章没有探讨转基因技术可能带来的风险和不确定性，也没有平等地呈现双方观点。这可能导致读者对转基因技术的看法产生偏见。

2. 缺乏实证数据：虽然该文章声称将多个抗病基因组合成一个转基因卡式可以提高小麦对锈菌病的抵抗力，但缺乏实证数据来支持这一主张。此外，该文章也没有探讨其他可能的方法来提高小麦对锈菌病的抵抗力。

3. 片面报道：该文章只关注了小麦对锈菌病的抵抗力，而忽略了其他可能影响农作物产量和质量的因素。例如，转基因技术可能会影响土壤微生物群落和生态系统稳定性。

4. 宣传内容：该文章似乎旨在宣传一种新型转基因技术，并未全面评估其潜在风险和不确定性。这可能会误导读者，使他们认为该技术是解决农业问题的唯一方法。

综上所述，该文章存在偏袒转基因技术、缺乏实证数据、片面报道和宣传内容等问题。阅读者应该保持批判性思维，对文章中提出的主张进行深入思考和评估。

# Topics for further research:

* Risks and uncertainties of genetic modification technology
* Empirical evidence supporting the effectiveness of combining multiple disease-resistant genes
* Other methods for improving wheat resistance to rust disease
* Potential impacts of genetic modification on soil microbial communities and ecosystem stability
* Evaluation of the potential risks and uncertainties of the new genetic modification technology
* Alternative solutions to agricultural problems beyond genetic modification technology

# Report location:

<https://www.fullpicture.app/item/d5de11eb9a8f985f6cf071a267bff868>