# Article information:

Benchmarking algorithms for gene regulatory network inference from single-cell transcriptomic data | Nature Methods  
<https://www.nature.com/articles/s41592-019-0690-6>

# Article summary:

1. Single-cell RNA-sequencing technology has made it possible to trace cellular lineages during differentiation and to identify new cell types.

2. A comprehensive evaluation framework, BEELINE, has been developed to assess the accuracy, robustness and efficiency of GRN inference techniques for single-cell gene expression data.

3. BEELINE incorporates 12 diverse GRN inference algorithms and provides an easy-to-use and uniform interface to each method in the form of a Docker image.

# 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 as it provides a comprehensive overview of the current state of gene regulatory network (GRN) inference from single-cell transcriptomic data. The authors provide a detailed description of their evaluation framework, BEELINE, which incorporates 12 diverse GRN inference algorithms and provides an easy-to-use and uniform interface to each method in the form of a Docker image. Furthermore, they provide evidence for their claims by using three types of datasets: datasets from synthetic networks, datasets from curated Boolean models from the literature and experimental single-cell transcriptional measurements.

The article does not appear to be biased or one sided as it presents both sides equally by providing evidence for their claims as well as exploring counterarguments. Additionally, there is no promotional content or partiality present in the article as it focuses solely on providing an objective overview of the current state of GRN inference from single cell transcriptomic data. The article also notes potential risks associated with GRN inference such as substantial cellular heterogeneity, cell-to-cell variation in sequencing depth, high sparsity caused by dropouts and cell cycle related effects.

In conclusion, this article is reliable and trustworthy due to its comprehensive overview of GRN inference techniques for single cell transcriptomic data as well as its lack of bias or promotional content.

# Topics for further research:

* Single-cell transcriptomic data analysis
* GRN inference algorithms
* Synthetic networks datasets
* Curated Boolean models
* Dropout effects in single-cell transcriptomics
* Cell cycle related effects in GRN inference

# Report location:

<https://www.fullpicture.app/item/f30e765648f73c8f8f70278110bc36b2>