# Article information:

Single-cell spatial immune landscapes of primary and metastatic brain tumours | Nature
<https://www.nature.com/articles/s41586-022-05680-3>

# Article summary:

1. Brain tumours are a diverse group of malignancies that can arise from within the brain or from cancer cells that have spread from other primary sites.

2. Imaging mass cytometry (IMC) was used to characterize the brain TME of glioblastoma and BrM, and explore how spatially resolved features relate to clinical outcomes.

3. IMC revealed major cell populations in the stromal compartment across all tissues, including GFAP+ astrocytes and CD68+ macrophages, whereas lymphocytes were relatively infrequent.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article is generally reliable and trustworthy, as it provides a comprehensive overview of the use of imaging mass cytometry (IMC) to characterize the brain TME of glioblastoma and BrM, and explore how spatially resolved features relate to clinical outcomes. The authors provide detailed information on their methodology, including antibody validation in normal and malignant tissues, segmentation into 1,163,362 total cells, and supervised lineage assignment approach used to classify tumour cells, astrocytes, blood vessels and more than 16 immune cell populations using canonical identity markers. The article also presents data on relative average expression of all markers across cell populations identified using IMC as well as the distribution of cell populations as a percentage of all cells in the TME sorted by tissue type.

However, there are some potential biases in the article that should be noted. For example, while the authors provide detailed information on their methodology for profiling the brain TME with IMC, they do not discuss any potential limitations or challenges associated with this approach. Additionally, while they present data on relative average expression of all markers across cell populations identified using IMC as well as the distribution of cell populations as a percentage of all cells in the TME sorted by tissue type, they do not discuss any potential implications or applications for these findings. Furthermore, while they discuss promising therapeutic targets within the TME of other cancers that have been revealed by single-cell profiling technologies such as multiplex imaging which have enabled discovery of several new biomarkers predictive of outcomes and therapeutic efficacy in breast cancer among others; they do not discuss any potential implications or applications for these findings either. Finally, while they discuss survival beyond 2 years being rare for brain tumours treated with cytotoxic therapies such as stereotactic radiotherapy; they do not discuss any potential alternative treatments or strategies that could improve patient outcomes.

# Topics for further research:

* Limitations of imaging mass cytometry
* Implications of single-cell profiling technologies
* Biomarkers predictive of outcomes in brain tumours
* Therapeutic efficacy of cytotoxic therapies
* Alternative treatments for brain tumours
* Strategies to improve patient outcomes in brain tumours

# Report location:

<https://www.fullpicture.app/item/7fbc1b63288a7c5294b7b2b290b1a5eb>