# Article information:

Downregulation of TLX induces TET3 expression and inhibits glioblastoma stem cell self-renewal and tumorigenesis | Nature Communications  
<https://www.nature.com/articles/ncomms10637>

# Article summary:

1. Glioblastoma (GBM) is the most aggressive primary brain tumour with no effective treatment yet.

2. TLX (NR2E1) has been shown to be expressed in human GBM tissues and cell lines, and play a role in GBM development in mouse tumour models.

3. This study demonstrates that knockdown of TLX using dendrimer nanovector-delivered synthetic siRNAs or virally expressed short hairpin RNAs (shRNAs) dramatically reduces GSC growth and self-renewal, inhibits GSC-induced tumorigenesis, and prolongs the lifespan of GSC-grafted animals substantially.

# 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 “Downregulation of TLX induces TET3 expression and inhibits glioblastoma stem cell self-renewal and tumorigenesis” is a research paper published in Nature Communications that discusses the role of TLX (NR2E1) in glioblastoma stem cells (GSCs). The authors present evidence that suggests that downregulation of TLX can reduce GSC growth and self-renewal, inhibit GSC-induced tumorigenesis, and prolong the lifespan of GSC-grafted animals.

The article is generally well written and provides a comprehensive overview of the research conducted by the authors. The methods used are clearly described, as are the results obtained from each experiment. The authors also provide detailed discussion on their findings, which helps to explain their conclusions.

However, there are some potential biases in this article that should be noted. For example, all experiments were conducted using only human GSCs isolated from newly diagnosed World Health Organization grade IV GBMs patients; thus it is unclear if these results would apply to other types of cancer stem cells or other types of tumors. Additionally, while the authors discuss possible mechanisms for how downregulation of TLX affects GSCs, they do not provide any evidence to support these claims; thus further research is needed to confirm these hypotheses.

In addition, while the authors discuss various delivery technologies for RNA interference such as viral vectors and non-viral vectors like cationic lipids and polymers, they focus primarily on dendrimers as a delivery system for small interfering RNAs (siRNAs). While dendrimers may be an effective delivery system for siRNAs into tumour stem cells,

# Topics for further research:

* Cancer stem cell types
* Tumorigenesis mechanisms
* Non-viral vector delivery systems
* Alternative siRNA delivery technologies
* TLX regulation in other cancers
* TLX regulation in other tumor types

# Report location:

<https://www.fullpicture.app/item/be611e8592f00824675ffa9bfd2cbcb4>