# Article information:

Selective organ targeting (SORT) nanoparticles for tissue-specific mRNA delivery and CRISPR–Cas gene editing | Nature Nanotechnology
<https://www.nature.com/articles/s41565-020-0669-6>

# Article summary:

1. The development of CRISPR–Cas-based gene editing and messenger RNA-based gene replacement technologies have opened up new possibilities for treating genetic diseases.

2. Selective ORgan Targeting (SORT) is a strategy that allows nanoparticles to be systematically engineered for accurate delivery of diverse cargoes including mRNA, Cas9 mRNA/single guide RNA (sgRNA) and Cas9 ribonucleoprotein (RNP) complexes to the lungs, spleens and livers of mice following intravenous (i.v.) administration.

3. SORT is compatible with various methods that deploy gene editing machinery, enabling high levels of mRNA delivery and tissue-specific gene editing.

# 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 “Selective organ targeting (SORT) nanoparticles for tissue-specific mRNA delivery and CRISPR–Cas gene editing” provides an overview of a promising new technology for delivering therapeutic nucleic acids to targeted tissues beyond the liver. The authors present evidence for tissue-specific delivery, demonstrate that this methodology is applicable to various nanoparticle systems, and provide a new method for predictable LNP design to target therapeutically relevant cells.

The article appears to be well researched and reliable in its presentation of the technology and its potential applications in treating genetic diseases. The authors provide evidence from experiments conducted on mice as well as detailed descriptions of the methodology used in their research. Furthermore, they discuss potential risks associated with the use of this technology, such as off-target effects or unintended consequences due to incorrect dosage or timing of administration.

However, there are some points that could be further explored in order to make the article more comprehensive and trustworthy. For example, while the authors discuss potential risks associated with using this technology, they do not provide any information on how these risks can be minimized or avoided altogether. Additionally, while they discuss potential applications in treating genetic diseases, they do not explore any other possible applications or implications of this technology outside of medicine. Finally, while they provide evidence from experiments conducted on mice, it would be beneficial if they also provided evidence from experiments conducted on humans or other animals in order to further validate their findings.

In conclusion, overall the article “Selective organ targeting (SORT) nanoparticles for tissue-specific mRNA delivery and CRISPR–Cas gene editing” appears to be reliable in its presentation of the technology and its potential applications in treating genetic diseases; however there are some points that could be further explored in order to make it more comprehensive and trustworthy.

# Topics for further research:

* Minimizing risks associated with SORT nanoparticles
* Non-medical applications of SORT nanoparticles
* Evidence from human trials of SORT nanoparticles
* CRISPR-Cas gene editing safety
* Tissue-specific delivery of therapeutic nucleic acids
* Predictable LNP design for targeted cells

# Report location:

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