# Article information:

Low molecular weight polysialic acid prevents lipopolysaccharide‐induced inflammatory dopaminergic neurodegeneration in humanized SIGLEC11 transgenic mice - Liao - 2021 - Glia - Wiley Online Library  
<https://onlinelibrary.wiley.com/doi/10.1002/glia.24073>

# Article summary:

1. Parkinson's disease is a chronic neurodegenerative disorder with a worldwide prevalence of 2-3% in people aged 65 and older.

2. Genome-wide association studies and transcriptome-wide association studies suggest that genes involved in immune cell-mediated clearance and/or protein clearance are major risks for developing Parkinson's disease.

3. Polysialic acid (polySia) has been shown to interact with the immunoreceptor tyrosine-based inhibitory motif (ITIM)-bearing sialic acid-binding immunoglobulin-like lectin-11 (SIGLEC11) receptor, thus preventing inflammation, phagocytosis and oxidative burst of human macrophages as well as reducing loss of neurites in a macrophage-neuron co-culture system.

# 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 trustworthy and reliable, as it provides evidence from multiple sources such as genome-wide association studies, transcriptome-wide association studies, animal experimental models, Parkinson's disease patients, etc., to support its claims. The article also presents both sides of the argument equally by discussing the potential benefits of polysialic acid in preventing inflammation, phagocytosis and oxidative burst of human macrophages as well as reducing loss of neurites in a macrophage-neuron co-culture system while also noting possible risks associated with its use. Furthermore, the article does not contain any promotional content or partiality towards any particular point of view.

However, there are some points that could be improved upon in terms of trustworthiness and reliability. For example, the article does not provide any evidence for its claims regarding the effects of polysialic acid on dopaminergic neurodegeneration triggered by systemic LPS challenge in both humanized SIGLEC11 transgenic mice and wild type mice. Additionally, there is no discussion about unexplored counterarguments or missing points of consideration which could have further strengthened the article’s credibility.

# Topics for further research:

* Polysialic acid effects on dopaminergic neurodegeneration
* Systemic LPS challenge in humanized SIGLEC11 transgenic mice
* Potential risks of polysialic acid use
* Neurite loss in macrophage-neuron co-culture system
* Genome-wide association studies on polysialic acid
* Transcriptome-wide association studies on polysialic acid

# Report location:

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