



## The Divine Armor for Combating Neurological Disorders

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### INTRODUCTION

The pathogenesis and aetiology of neurological disorders vary widely. Atypical protein deposits are a defining feature of Alzheimer's disease (AD). Parkinson's disease (PD) results in dopaminergic neurons specifically degenerating, resulting in motor and sensory impairment. Because Huntingtin is a versatile source for cell therapy, its use is especially important for neurological disorders for which there is no conclusive conventional medical treatment.

### DESCRIPTION

In recent years, a variety of stem cell types have been used in a variety of animal models, including transgenic animals of a variety of neurological conditions. Some clinical trials were planned and approved on the basis of some of the successful animal studies. Some studies were successful, some were stopped, and a few failed. This illustrates the necessity of attempting to tailor various kinds of cells to repair the specific defect that is characteristic of each disease.

In the 21<sup>st</sup> century, stem cells have taken on a significant role in both medical research and treatment. The ability to self-renew and differentiate into a range of body cell types makes stem cells distinct from other types of body cells. They have the capacity to both differentiate into various mature cells and to stay totipotent. Adult stem cells, induced pluripotent stem cells, embryonic stem cells, and foetal stem cells are the different types of stem cell sources.

Previous studies suggest that stem cell therapy for neurological illnesses may be helpful in small-scale clinical trials and experimental disease models. Choosing the best cell type for a particular condition is challenging. This is due to the diverse variety of neuropathological effects that these disorders exhibit. Despite its challenges and complexity, using stem cells to treat neurodegenerative illnesses in the future is still a fascinating possibility. It is still impossible and unrealistic to use stem cells to replace lost neurons and integrate them into the original neural circuitry in neurodegenerative illnesses.

Human umbilical cord stem cells were somewhat improved cognitive performance in AD patients. Grafting foetal or adrenal medullary tissues improved Parkinson's disease symptoms in patients, although the patients also reported neuropsychiatric side effects. Additionally, the use of foetal tissue produced from aborted foetuses raises ethical questions in a number of professions. Additionally necessary is long-term immunosuppression following tissue donation. Certain medications, such as erythropoietin, could be used with the transplanted cells in neurogenesis trials [1-4].

### CONCLUSION

The transfer of medications and cell systems is facilitated by these nanoparticles, which pass through the BBB and penetrate the target brain regions without harming the environment around them. To help distribute and preserve stem cells at the transplant site, hydrophilic polymers could be employed to enclose them. The use of gene therapy and neural development factors has also improved the retention of donated stem cells for AD and PD. Cell preconditioning with growth factors, hypoxia, and genetic alteration were beneficial at the experimental level. The objective is to improve the transplanted cells' quality of life and performance. Combination and preconditioning therapies are spreading, and it seems that eventually they will outnumber other strategies in this field.

### ACKNOWLEDGEMENT

The authors are grateful to the journal editor and the anonymous reviewers for their helpful comments and suggestions.

### DECLARATION OF CONFLICTING INTERESTS

The authors declared no potential conflicts of interest for the research, authorship, and/or publication of this article.

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<b>Received:</b>	31-August-2022	<b>Manuscript No:</b>	IPBMBJ-22-14656
<b>Editor assigned:</b>	02-September-2022	<b>PreQC No:</b>	IPBMBJ-22-14656 (PQ)
<b>Reviewed:</b>	16-September-2022	<b>QC No:</b>	IPBMBJ-22-14656
<b>Revised:</b>	21-September-2022	<b>Manuscript No:</b>	IPBMBJ-22-14656 (R)
<b>Published:</b>	28-September-2022	<b>DOI:</b>	10.36648/2471-8084-8.9.91

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**Citation** Li LX (2022) The Divine Armor for Combating Neurological Disorders. *Biochem Mol Biol J.* 8:91.

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