

Embryonic Neural Precursor Cells: Exploring Medical Potential and Ethical Implications

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DESCRIPTION

Embryonic Neural Precursor Cells (NPCs) hold tremendous promise in the field of regenerative medicine. These cells have the potential to differentiate into various types of neurons and glial cells, offering hope for the treatment of neurological disorders. However, the use of embryonic NPCs also raises complex ethical considerations due to their origin and potential implications for human life. This essay delves into the medical potential of embryonic NPCs while exploring the ethical dilemmas associated with their use.

Embryonic Neural Precursor Cells and Medical Potential: Embryonic NPCs are derived from early-stage embryos, typically obtained from donated surplus embryos from assisted reproductive technologies. These cells possess the ability to develop into the diverse range of cells found in the central nervous system. Researchers believe that harnessing the regenerative capabilities of embryonic NPCs may lead to ground breaking advancements in the treatment of conditions such as Parkinson's disease, Alzheimer's disease, spinal cord injuries, and other neurological disorders.

The use of embryonic NPCs raises several ethical concerns, primarily centered around the status of the embryo, informed consent, and potential exploitation. A key ethical question revolves around the moral status of the embryo from which NPCs are derived. Some argue that an embryo has inherent moral worth and should be accorded the same ethical considerations as a fully developed human being. From this perspective, the use of embryonic NPCs may be seen as morally problematic.

Obtaining informed consent from individuals involved in the donation of embryos is crucial. Ethical guidelines dictate that individuals donating embryos should be fully informed about the nature and purpose of the research involving embryonic NPCs.

Informed consent ensures that individuals understand the potential uses of their donated embryos and have the autonomy to make decisions in line with their values and beliefs.

Another ethical concern is the principle of respect for embryonic life. Some argue that the use of embryonic NPCs involves the destruction of embryos, which is deemed ethically problematic due to the potential to extinguish potential human lives. Balancing the potential benefits of medical research with the respect for embryonic life poses a significant ethical challenge. Critics argue that the use of embryonic NPCs is ethically questionable when alternative sources of stem cells, such as adult stem cells and induced pluripotent stem cells, exist. These alternative sources do not involve the destruction of embryos and are readily accessible.

Ethical considerations require researchers to explore these alternative sources before resorting to the use of embryonic NPCs. Addressing the ethical concerns associated with embryonic NPCs requires careful deliberation and a balanced approach. Here are several strategies that can aid in navigating these ethical dilemmas. The establishment of ethical review boards or committees can provide oversight and guidance in research involving embryonic NPCs. These boards can ensure adherence to ethical principles, evaluate the justification for using embryonic NPCs and monitor the informed consent process.

Encouraging open and inclusive discussions among scientists, ethicists, policymakers, patient advocacy groups, and the general public is crucial. Engaging in public dialogue allows for a wider range of perspectives, fostering understanding and addressing concerns related to the use of embryonic NPCs. Continued research and development of alternative sources of stem cells, such as induced pluripotent stem cells, should be prioritized. Investing in these alternatives can provide ethically acceptable options and reduce reliance on embryonic NPCs.

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Received: 14-Mar-2023, Manuscript No. LDAME-23-24164; **Editor assigned:** 17-Mar-2023, Pre QC No. LDAME-23-24164 (PQ); **Reviewed:** 03-Apr-2023, QC No. LDAME-23-24164; **Revised:** 10-Apr-2023, Manuscript No. LDAME-23-24164 (R); **Published:** 17-Apr-2023, DOI: 10.35248/2385-5495.23.9.040

Citation: Saraki A (2023) Embryonic Neural Precursor Cells: Exploring Medical Potential and Ethical Implications. *Adv Med Ethics J.* 9:040.

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