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Nota di contenuto	Chapter 1) Introductory Remarks -- Part I) Scientific Background -- Chapter 2) Development of Brain Organoids on the Basis of Genome-Edited iPSC-Derived Brain Cells -- Chapter 3) Cell-Based Therapy and Genome Editing in Parkinson's Disease: Quo Vadis -- Part II) The Status Debate -- Chapter 4) Human Cerebral Organoids: Evolving Entities and Their Moral Status -- Chapter 5). Legal perspective: What is, or Should Be, the Legal Status of Brain Organoids? -- Part III) The Informed Consent Challenge -- Chapter 6) Ethical Perspective: Ethics Considerations Regarding Donors’ and Patients’ Consent -- Chapter 7)

The Legal Perspective: The Legal Requirements for—and Limits to—the Donor’s and the Patient’s Consent -- Part IV) The Chimera Issue -- Chapter 8) Moral Permissibility of Transplantation of Human Brain Organoids into Animals -- Chapter 9) Transplantation of Human Brain Organoids into Animals - The Legal Issues -- Part V) The Enhancement Conundrum -- Chapter 10) Building a Better Beast: Enhancing the Minds of Animals -- Chapter 11) Legal Arguments in Favour of and Against Neuroenhancement by Means of Brain Organoids -- Part VI) The Harmonization Problem -- Chapter 12) Legal Perspective: A Global Harmonisation of Legal Standards for Brain Organoid Research and Therapy?. .

Sommario/riassunto

This volume elucidates the pivotal ethical and legal issues arising from the use of brain organoids for research, therapeutic and enhancement purposes. The function of the human brain is still a mystery. Until recently, only post-mortem tissue was available for a structural examination of the brain. Consequently, the examination results could only reflect the state at the end of life. However, in order to better understand the development and function of the human brain, dynamic and functional investigations of different human brain cells are necessary. This is where brain organoids, artificially grown in vitro miniature brains, provide the opportunity for more flexible research scenarios. At the same time, however, the use of brain organoids in research and therapy raises the question of how these new entities are to be treated from an ethical and legal point of view. Against this background, this volume aims at clarifying the normative implications of the use of brain organoids in research and therapy. The ethical reflections on the status of brain organoids, informed consent, human-to-animal chimeras and neuro-enhancement are mirrored by corresponding legal analyses. The ethical and legal assessments are preceded by an introduction to the scientific and medical background of the brain organoid technology. A final chapter will be devoted to the issue of whether international harmonization of normative standards for brain organoid research and therapy is feasible and advisable.