

Special Issue on

Developing Clinical Applications of Embryonic Stem Cells and Induced Pluripotent Stem Cells 2024

CALL FOR PAPERS

Pluripotent stem cells, including embryonic stem cells (ESCs) and induced pluripotent stem cells (iPSCs), have the potential to generate all tissues of the human body. Human iPSCs, which contain the genotype responsible for human diseases, also have the potential to develop novel patient-specific cell therapies and research models for both inherited and acquired diseases.

Increasing amounts of evidence, including clinical trials, have indicated that ESCs and iPSCs show great promise as tools for clinical applications. However, there is still much research to be done, particularly in establishing patient-specific iPSCs and maintaining pluripotency. Other potential research areas include differentiation efficiency and stability, cellular functions, large scale expansion and Good Manufacturing Practice (GMP)-grade production, transplantation effect and long-term safety, human leukocyte antigen (HLA) matching and immune rejection, and drug screening.

This Special Issue hopes to gather papers concerning advances in ESCs and iPSCs-based research in both basic and clinical sciences, which aim to solve or improve the above problems. We invite authors to submit their work on maintenance, passage, and prediction of differential direction, transplantation, quality control, practical techniques, and other related studies on ESCs and iPSCs. We welcome both original research and review articles.

Potential topics include but are not limited to the following:

- ▶ Advances in ESC and iPSC research
- ▶ Identification and characterization of the pluripotency of ESCs and iPSCs
- ▶ Maintenance and passage of ESCs and iPSCs with and without feeders
- ▶ Three-germ-layer induction and differential prediction of ESCs and iPSCs
- ▶ Stable and practical techniques to maintain ESCs and iPSCs
- ▶ Embryoid body and three-dimensional culture as well large-scale cultural systems
- ▶ ESC and iPSC-derived organoids and transplantation, as well as tissue reconstitution and regeneration
- ▶ Long term safety and tumorigenicity tests with ESC and iPSC derived cells
- ▶ HLA matching and immune rejection of ESCs and iPSCs
- ▶ GMP level and quality control for clinical applications with ESCs and iPSCs
- ▶ Gene editing and mutation correction with CRISPR-Cas9 in ESCs and iPSCs
- ▶ Patient iPSCs and personalised medicine
- ▶ Disease modelling and drug screening with ESC and iPSC derived cells
- ▶ Single cell RNA assays in developmental biology and tissue regeneration with ESCs and iPSCs

Authors can submit their manuscripts through the Manuscript Tracking System at <https://review.wiley.com/submit?specialIssue=455088>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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