

Special Issue

Conditional Programming of Cells, Advanced Computational Methods, and Intelligent Systems in Prostate Cancer Research

Message from the Guest Editor

The biology of prostate cancer is shaped not only by genetic alterations but also by the conditions cells encounter in their environment. Recent research has begun to explore how prostate cancer cells respond to controlled cues in culture, such as nutrient changes, hormonal signals, mechanical forces, and targeted molecular stimuli. These condition-dependent behaviors offer insights into tumor progression, treatment resistance, and lineage plasticity. Combined with modern computational approaches, they provide new ways to study how cancer cells shift between different states. The central idea is to treat prostate cancer as a dynamic system, where cells behave differently depending on the conditions they encounter. By combining conditional programming in culture with advanced computational tools—such as machine learning, temporal modelling, and hybrid logic-based frameworks—we can begin to map the decision pathways that drive tumor evolution. This forward-looking perspective encourages research that not only describes what cells do, but explains why they do it under specific constraints, and how these insights can inform diagnosis, risk stratification, and therapy.

Guest Editor

Dr. Ahmed Fadiel

Biological Sciences Division, Comprehensive Cancer Center, University of Chicago (UCCCC), Chicago, IL, USA

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Cells
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
cells@mdpi.com

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Cells has become a solid international scientific journal that is now indexed on SCIE and in other databases. We have successfully introduced a special issues format so that these issues serve as mini-forums in specific areas of cell science. *Cells* encourages researchers to suggest new special issues, serve as special issues editors, and volunteer to be reviewers. Our main focus will remain on cell anatomy and physiology, the structure and function of organelles, cell adhesion and motility, and the regulation of intracellular signaling, growth, differentiation, and aging. We are open to both original research papers and reviews.

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