

Special Issue

Cancer Models: Development and Applications

Message from the Guest Editor

Cancer models, in particular, play a critical role in studying cancer biology, disease progression, and therapeutic intervention in a controlled setting. These models allow researchers to explore the molecular and cellular aspects of cancer, identify potential drug targets, and test the efficacy of new therapies before moving them into clinical trials. These include innovative systems such as perfused 3D organoids, which mimic the tumor microenvironment and allow for more physiologically relevant drug testing, and patient-derived xenografts (PDX), in which human tumor tissue is implanted into immunocompromised mice to closely mimic the characteristics of the original patient's cancer. Genetically engineered mouse models (GEMMs) are also widely used to study the role of specific genes in tumor development and response to therapy. In addition, zebrafish cancer models have emerged as a powerful tool for high-throughput screening due to their rapid development and genetic similarity to humans. By using a combination of these complementary models, researchers can more effectively evaluate therapeutic candidates, and move closer to developing personalized cancer treatments.

Guest Editor

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Deadline for manuscript submissions

20 June 2026



International Journal of Molecular Sciences

an Open Access Journal
by MDPI

Impact Factor 4.9
CiteScore 9.0
Indexed in PubMed



mdpi.com/si/218667

*International Journal of
Molecular Sciences*
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