

Special Issue

Tumor Organoids Uncovered: A Molecular Lens on Cancer Complexity

Message from the Guest Editors

Tumor organoids are advanced three-dimensional culture systems that replicate the architecture, cellular heterogeneity, and molecular features of human cancers. Bridging the gap between 2D cultures and animal models, they offer powerful tools to study cancer biology, drug resistance, and personalized therapy. Organoids are increasingly used in precision medicine, drug screening, and biomarker discovery. Their ability to model tumor microenvironment interactions, metabolic shifts, and therapeutic vulnerabilities provides insights previously inaccessible. This Special Issue highlights translational applications of tumor organoids, focusing on their role in unraveling molecular mechanisms of cancer and enabling clinical innovation. Aligned with IJMS's mission, we emphasize how organoid models advance precision oncology and therapeutic development—from basic discoveries to patient-derived strategies.

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