Special Issue

Nano-Drug Delivery Systems: Tackling Cancer Metabolism and Drug Resistance

Message from the Guest Editor

Cancer remains a leading cause of mortality worldwide, with therapeutic resistance and metabolic plasticity posing major challenges to effective treatment. This Special Issue focuses on the development and application of nano-drug delivery systems designed to target cancer metabolism and overcome drug resistance mechanisms. Nanotechnology offers unique advantages, such as targeted delivery, improved bioavailability, and controlled release, that can enhance the efficacy of anticancer agents while minimizing systemic toxicity. Of particular interest are nanosystems that disrupt metabolic pathways like glycolysis, glutaminolysis, and oxidative phosphorylation, or that modulate the tumor microenvironment to sensitize resistant cancer cells to therapy. We invite original research articles, reviews, and short communications that explore innovative nanocarriers, combination strategies, and preclinical or clinical advances in this field. By integrating nanotechnology with a deep understanding of tumor biology, this Special Issue aims to pave the way for next-generation therapies that effectively combat cancer progression and treatment resistance.

Guest Editor

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Deadline for manuscript submissions

31 December 2025

Pharmaceutics

an Open Access Journal by MDPI

Impact Factor 5.5
CiteScore 10.0
Indexed in PubMed

mdpi.com/si/245141

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Indexed in PubMed

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