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Nanopharmaceutical Approaches for Inducing Cell Death in Tumors

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Deadline for manuscript submissions:
closed (10 February 2026)

Message from the Guest Editors

Dear Colleagues,

The evolving field of nanopharmaceuticals presents significant potential for innovation in the targeted treatment of tumors, especially through the induction of cell death. This Special Issue of *Nanomaterials* explores the latest advancements in nanopharmaceutical approaches designed to induce apoptosis or other forms of cell death, such as necrosis, autophagy, pyroptosis, ferroptosis, necroptosis, PANoptosis, etc., in cancerous cells. Emphasizing original strategies, this issue addresses the development and application of various nanomaterials, including nanoparticles, nanocarriers, and nanosystems, engineered to deliver therapeutic agents to tumor sites with high efficacy, thereby promoting cancer cell death and tumor suppression. Contributions also delve into the molecular mechanisms by which nanopharmaceuticals induce cell death, offering insights into their interactions with cellular pathways and their potential to overcome drug resistance.

Through a collection of original research articles and reviews, this Special Issue aims to provide a comprehensive overview of the state of the art in nanopharmaceuticals for tumor therapy.

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Message from the Editor-in-Chief

Nanoscience and nanotechnology are exciting fields of research and development, with wide applications to electronic, optical, and magnetic devices, biology, medicine, energy, and defense. At the heart of these fields are the synthesis, characterization, modeling, and applications of new materials with lower nanometer-scale dimensions, which we call “nanomaterials”. These materials can exhibit unusual mesoscopic properties and include nanoparticles, coatings and thin films, metal–organic frameworks, membranes, nano-alloys, quantum dots, self-assemblies, 2D materials such as graphene, and nanotubes. Our journal, *Nanomaterials*, has the goal of publishing the highest quality papers on all aspects of nanomaterial science to an interdisciplinary scientific audience. All of our articles are published with rigorous refereeing and open access. We are proud of our increasing impact factor and ability to provide rapid decisions to authors.

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