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The Effect of Graphene on Cancer

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Deadline for manuscript
submissions:

closed (31 December 2021)

Message from the Guest Editor

Graphene, a two-dimensional carbon nanomaterial with unique physicochemical properties, has been widely explored for biomedical applications, including tumor treatment. Graphene anticancer applications are mainly focused on, but not limited to, analysis of direct interaction with tumor cells and development of drug delivery strategies. Graphene and related materials show direct antitumor effects through different mechanisms, including direct plasma membrane damage and mitochondria destabilization. Moreover, versatile capability to conjugate different active compounds to graphene-related materials makes it a promising nanomaterial for different strategies that affect cancer cell physiology, including cell proliferation, migration, and stimulation of angiogenesis. Due to its two-dimensional structure, graphene can serve as a nanoplatform for active compounds like bioactive peptides, drugs, and receptor ligands. Depending on the size of the flakes, graphene can be effectively taken up into cancer cells or strongly adhere to cell surfaces, having high retention at the place of administration, which makes it promising for the limitation of toxicity for healthy tissues.



mdpi.com/si/29640



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Message from the Editor-in-Chief

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