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Zinc Oxide and Gallium Nitride Nanoparticles Application in Biomedicine: A Review

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Abstract

Currently available data have a major impact on widening the applications area of zinc oxide (ZnO) and gallium nitride (GaN) nanoparticles (NPs). Being a new medical domain, nanomedicine shows a spectacular growth of published works. Thus, in this paper we aimed to provide comprehensive current information on the implementation of inoffensive synthetized ZnO and GaN nanoparticles. The articles in the PubMed database, Bethesda (MD): US National Library of Medicine, “PubMed.gov”, Google Scholar Academic containing the keywords “nanoparticles, zinc oxide, gallium nitride, cytotoxicity, adhesion” were selected. From these articles it was collected and processed the information related to the applicability of ZnO and GaN NPs. Nanoparticles based on ZnO and GaN currently have a wide range of implementation in the field of oncology, antibacterial, antifungal domains. The combination of ZnO and GaN nanoparticles as adjuvants in target factor treatments shows an increased efficacy of the active substance obtained by ecological methods. The application of ZnO GaN NPs requires innovative methods to obtain beneficial results in biomedicine. Possession of clinical nomenclature for use of ZnO and GaN NPs would reduce their cytotoxic effects in practical applications.

Keywords: nanoparticles, zinc oxide, gallium nitride, cytotoxicity, nanomedicine, biomedicine

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